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(54) Title: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract: The present invention provides novel nucleic acids, novel polypeptide sequences encoded by these nucleic acids and uses thereof.

NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

1. TECHNICAL FIELD

The present invention provides novel polynucleotides and proteins encoded by
such polynucleotides, along with uses for these polynucleotides and proteins, for example
in therapeutic, diagnostic and research methods.

2. BACKGROUND

Technology aimed at the discovery of protein factors (including e.g., cytokines,
such as lymphokines, interferons, CSFs, chemokines, and interleukins) has matured
rapidly over the past decade. The now routine hybridization cloning and expression
cloning techniques clone novel polynucleotides "directly" in the sense that they rely on
information directly related to the discovered protein (i.e., partial DNA/amino acid
sequence of the protein in the case of hybridization cloning; activity of the protein in the
case of expression cloning). More recent "indirect" cloning techniques such as signal
sequence cloning, which isolates DNA sequences based on the presence of a now
well-recognized secretory leader sequence motif, as well as various PCR-based or low
stringency hybridization-based cloning techniques, have advanced the state of the art by
making available large numbers of DNA/amino acid sequences for proteins that are
known to have biological activity, for example, by virtue of their secreted nature in the
case of leader sequence cloning, by virtue of their cell or tissue source in the case of
PCR-based techniques, or by virtue of structural similarity to other genes of known
biological activity.

Identified polynucleotide and polypeptide sequences have numerous applications
in, for example, diagnostics, forensics, gene mapping; identification of mutations
responsible for genetic disorders or other traits, to assess biodiversity, and to produce
many other types of data and products dependent on DNA and amino acid sequences.

3. SUMMARY OF THE INVENTION

The compositions of the present invention include novel isolated polypeptides, novel
isolated polynucleotides encoding such polypeptides, including recombinant DNA

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molecules, cloned genes or degenerate variants thereof, especially naturally occurring variants such as allelic variants, antisense polynucleotide molecules, and antibodies that specifically recognize one or more epitopes present on such polypeptides, as well as hybridomas producing such antibodies.

5   The compositions of the present invention additionally include vectors, including expression vectors, containing the polynucleotides of the invention, cells genetically engineered to contain such polynucleotides and cells genetically engineered to express such polynucleotides.

          The present invention relates to a collection or library of at least one novel nucleic
10   acid sequence assembled from expressed sequence tags (ESTs) isolated mainly by sequencing by hybridization (SBH), and in some cases, sequences obtained from one or more public databases. The invention relates also to the proteins encoded by such polynucleotides, along with therapeutic, diagnostic and research utilities for these polynucleotides and proteins. These nucleic acid sequences are designated as SEQ ID NO:
15   1-739. The polypeptides sequences are designated SEQ ID NO: 740-1478. The nucleic acids and polypeptides are provided in the Sequence Listing. In the nucleic acids provided in the Sequence Listing, A is adenosine; C is cytosine; G is guanine; T is thymine; and N is any of the four bases. In the amino acids provided in the Sequence Listing, * corresponds to the stop codon.

20   The nucleic acid sequences of the present invention also include, nucleic acid sequences that hybridize to the complement of SEQ ID NO:1-739 under stringent hybridization conditions; nucleic acid sequences which are allelic variants or species homologues of any of the nucleic acid sequences recited above, or nucleic acid sequences that encode a peptide comprising a specific domain or truncation of the peptides encoded by
25   SEQ ID NO:1-739. A polynucleotide comprising a nucleotide sequence having at least 90% identity to an identifying sequence of SEQ ID NO:1-739 or a degenerate variant or fragment thereof. The identifying sequence can be 100 base pairs in length.

          The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-739. The sequence
30   information can be a segment of any one of SEQ ID NO:1-739 that uniquely identifies or represents the sequence information of SEQ ID NO:1-739.

A collection as used in this application can be a collection of only one polynucleotide. The collection of sequence information or identifying information of each sequence can be provided on a nucleic acid array. In one embodiment, segments of sequence information is provided on a nucleic acid array to detect the polynucleotide that

5   contains the segment. The array can be designed to detect full-match or mismatch to the polynucleotide that contains the segment. The collection can also be provided in a computer-readable format.

This invention also includes the reverse or direct complement of any of the nucleic acid sequences recited above; cloning or expression vectors containing the nucleic acid

10   sequences; and host cells or organisms transformed with these expression vectors. Nucleic acid sequences (or their reverse or direct complements) according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology, such as use as hybridization probes, use as primers for PCR, use in an array, use in computer-readable media, use in sequencing full-length genes, use for

15   chromosome and gene mapping, use in the recombinant production of protein, and use in the generation of anti-sense DNA or RNA, their chemical analogs and the like.

In a preferred embodiment, the nucleic acid sequences of SEQ ID NO:1-739 or novel segments or parts of the nucleic acids of the invention are used as primers in expression assays that are well known in the art. In a particularly preferred embodiment, the

20   nucleic acid sequences of SEQ ID NO:1-739 or novel segments or parts of the nucleic acids provided herein are used in diagnostics for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

The isolated polynucleotides of the invention include, but are not limited to, a

25   polynucleotide comprising any one of the nucleotide sequences set forth in SEQ ID NO:1-739; a polynucleotide comprising any of the full length protein coding sequences of SEQ ID NO:1 - 739; and a polynucleotide comprising any of the nucleotide sequences of the mature protein coding sequences of SEQ ID NO: 1- 739. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under

30   stringent hybridization conditions to (a) the complement of any one of the nucleotide sequences set forth in SEQ ID NO:1-739; (b) a nucleotide sequence encoding any one of the

amino acid sequences set forth in the Sequence Listing; (c) a polynucleotide which is an allelic variant of any polynucleotides recited above; (d) a polynucleotide which encodes a species homolog (e.g. orthologs) of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of any

5   of the polypeptides comprising an amino acid sequence set forth in the Sequence Listing.

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising any of the amino acid sequences set forth in the Sequence Listing; or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides with biological activity that are encoded by (a) any of the polynucleotides

10   having a nucleotide sequence set forth in SEQ ID NO:1-739; or (b) polynucleotides that hybridize to the complement of the polynucleotides of (a) under stringent hybridization conditions. Biologically or immunologically active variants of any of the polypeptide sequences in the Sequence Listing, and "substantial equivalents" thereof (e.g., with at least about 65%, 70%, 75%, 80%, 85%, 90%, 95%, 98% or 99% amino acid sequence identity)

15   that preferably retain biological activity are also contemplated. The polypeptides of the invention may be wholly or partially chemically synthesized but are preferably produced by recombinant means using the genetically engineered cells (e.g. host cells) of the invention.

The invention also provides compositions comprising a polypeptide of the invention. Polypeptide compositions of the invention may further comprise an acceptable

20   carrier, such as a hydrophilic, e.g., pharmaceutically acceptable, carrier.

The invention also provides host cells transformed or transfected with a polynucleotide of the invention.

The invention also relates to methods for producing a polypeptide of the invention comprising growing a culture of the host cells of the invention in a suitable culture

25   medium under conditions permitting expression of the desired polypeptide, and purifying the polypeptide from the culture or from the host cells. Preferred embodiments include those in which the protein produced by such process is a mature form of the protein.

Polynucleotides according to the invention have numerous applications in a variety of techniques known to those skilled in the art of molecular biology. These

30   techniques include use as hybridization probes, use as oligomers, or primers, for PCR, use for chromosome and gene mapping, use in the recombinant production of protein,

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and use in generation of anti-sense DNA or RNA, their chemical analogs and the like. For example, when the expression of an mRNA is largely restricted to a particular cell or tissue type, polynucleotides of the invention can be used as hybridization probes to detect the presence of the particular cell or tissue mRNA in a sample using, *e.g.*, *in situ*

5   hybridization.

In other exemplary embodiments, the polynucleotides are used in diagnostics as expressed sequence tags for identifying expressed genes or, as well known in the art and exemplified by Vollrath et al., Science 258:52-59 (1992), as expressed sequence tags for physical mapping of the human genome.

10   The polypeptides according to the invention can be used in a variety of conventional procedures and methods that are currently applied to other proteins. For example, a polypeptide of the invention can be used to generate an antibody that specifically binds the polypeptide. Such antibodies, particularly monoclonal antibodies, are useful for detecting or quantitating the polypeptide in tissue. The polypeptides of the

15   invention can also be used as molecular weight markers, and as a food supplement.

Methods are also provided for preventing, treating, or ameliorating a medical condition which comprises the step of administering to a mammalian subject a therapeutically effective amount of a composition comprising a polypeptide of the present invention and a pharmaceutically acceptable carrier.

20   In particular, the polypeptides and polynucleotides of the invention can be utilized, for example, in methods for the prevention and/or treatment of disorders involving aberrant protein expression or biological activity.

The present invention further relates to methods for detecting the presence of the polynucleotides or polypeptides of the invention in a sample. Such methods can, for

25   example, be utilized as part of prognostic and diagnostic evaluation of disorders as recited herein and for the identification of subjects exhibiting a predisposition to such conditions. The invention provides a method for detecting the polynucleotides of the invention in a sample, comprising contacting the sample with a compound that binds to and forms a complex with the polynucleotide of interest for a period sufficient to form

30   the complex and under conditions sufficient to form a complex and detecting the complex such that if a complex is detected, the polynucleotide of interest is detected. The

invention also provides a method for detecting the polypeptides of the invention in a sample comprising contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex and detecting the formation of the complex such that if a complex is formed, the

5   polypeptide is detected.

The invention also provides kits comprising polynucleotide probes and/or monoclonal antibodies, and optionally quantitative standards, for carrying out methods of the invention. Furthermore, the invention provides methods for evaluating the efficacy of drugs, and monitoring the progress of patients, involved in clinical trials for the treatment

10   of disorders as recited above.

The invention also provides methods for the identification of compounds that modulate (i.e., increase or decrease) the expression or activity of the polynucleotides and/or polypeptides of the invention. Such methods can be utilized, for example, for the identification of compounds that can ameliorate symptoms of disorders as recited herein.

15   Such methods can include, but are not limited to, assays for identifying compounds and other substances that interact with (e.g., bind to) the polypeptides of the invention. The invention provides a method for identifying a compound that binds to the polypeptides of the invention comprising contacting the compound with a polypeptide of the invention in a cell for a time sufficient to form a polypeptide/compound complex, wherein the

20   complex drives expression of a reporter gene sequence in the cell; and detecting the complex by detecting the reporter gene sequence expression such that if expression of the reporter gene is detected the compound the binds to a polypeptide of the invention is identified.

The methods of the invention also provides methods for treatment which involve

25   the administration of the polynucleotides or polypeptides of the invention to individuals exhibiting symptoms or tendencies. In addition, the invention encompasses methods for treating diseases or disorders as recited herein comprising administering compounds and other substances that modulate the overall activity of the target gene products. Compounds and other substances can effect such modulation either on the level of target

30   gene/protein expression or target protein activity.

The polypeptides of the present invention and the polynucleotides encoding them are also useful for the same functions known to one of skill in the art as the polypeptides and polynucleotides to which they have homology (set forth in Table 2). If no homology is set forth for a sequence, then the polypeptides and polynucleotides of the present

5 invention are useful for a variety of applications, as described herein, including use in arrays for detection.

4. DETAILED DESCRIPTION OF THE INVENTION

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4.1 DEFINITIONS

It must be noted that as used herein and in the appended claims, the singular forms "a", "an" and "the" include plural references unless the context clearly dictates otherwise.

15   The term "active" refers to those forms of the polypeptide which retain the biologic and/or immunologic activities of any naturally occurring polypeptide. According to the invention, the terms "biologically active" or "biological activity" refer to a protein or peptide having structural, regulatory or biochemical functions of a naturally occurring molecule. Likewise "immunologically active" or "immunological activity" refers to the

20 capability of the natural, recombinant or synthetic polypeptide to induce a specific immune response in appropriate animals or cells and to bind with specific antibodies.

The term "activated cells" as used in this application are those cells which are engaged in extracellular or intracellular membrane trafficking, including the export of secretory or enzymatic molecules as part of a normal or disease process.

25   The terms "complementary" or "complementarity" refer to the natural binding of polynucleotides by base pairing. For example, the sequence 5'-AGT-3' binds to the complementary sequence 3'-TCA-5'. Complementarity between two single-stranded molecules may be "partial" such that only some of the nucleic acids bind or it may be "complete" such that total complementarity exists between the single stranded molecules.

30 The degree of complementarity between the nucleic acid strands has significant effects on the efficiency and strength of the hybridization between the nucleic acid strands.

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The term "embryonic stem cells (ES)" refers to a cell that can give rise to many differentiated cell types in an embryo or an adult, including the germ cells. The term "germ line stem cells (GSCs)" refers to stem cells derived from primordial stem cells that provide a steady and continuous source of germ cells for the production of gametes. The

5   term "primordial germ cells (PGCs)" refers to a small population of cells set aside from other cell lineages particularly from the yolk sac, mesenteries, or gonadal ridges during embryogenesis that have the potential to differentiate into germ cells and other cells. PGCs are the source from which GSCs and ES cells are derived The PGCs, the GSCs and the ES cells are capable of self-renewal. Thus these cells not only populate the germ

10   line and give rise to a plurality of terminally differentiated cells that comprise the adult specialized organs, but are able to regenerate themselves.

        The term "expression modulating fragment," EMF, means a series of nucleotides which modulates the expression of an operably linked ORF or another EMF.

        As used herein, a sequence is said to "modulate the expression of an operably

15   linked sequence" when the expression of the sequence is altered by the presence of the EMF. EMFs include, but are not limited to, promoters, and promoter modulating sequences (inducible elements). One class of EMFs are nucleic acid fragments which induce the expression of an operably linked ORF in response to a specific regulatory factor or physiological event.

20   The terms "nucleotide sequence" or "nucleic acid" or "polynucleotide" or "oligonculeotide" are used interchangeably and refer to a heteropolymer of nucleotides or the sequence of these nucleotides. These phrases also refer to DNA or RNA of genomic or synthetic origin which may be single-stranded or double-stranded and may represent the sense or the antisense strand, to peptide nucleic acid (PNA) or to any DNA-like or

25   RNA-like material. In the sequences herein A is adenine, C is cytosine, T is thymine, G is guanine and N is A, C, G or T (U). It is contemplated that where the polynucleotide is RNA, the T (thymine) in the sequences provided herein is substituted with U (uracil). Generally, nucleic acid segments provided by this invention may be assembled from fragments of the genome and short oligonucleotide linkers, or from a series of

30   oligonucleotides, or from individual nucleotides, to provide a synthetic nucleic acid

which is capable of being expressed in a recombinant transcriptional unit comprising regulatory elements derived from a microbial or viral operon, or a eukaryotic gene.

The terms "oligonucleotide fragment" or a "polynucleotide fragment", "portion," or "segment" or "probe" or "primer" are used interchangeably and refer to a sequence of

5　nucleotide residues which are at least about 5 nucleotides, more preferably at least about 7 nucleotides, more preferably at least about 9 nucleotides, more preferably at least about 11 nucleotides and most preferably at least about 17 nucleotides. The fragment is preferably less than about 500 nucleotides, preferably less than about 200 nucleotides, more preferably less than about 100 nucleotides, more preferably less than about 50

10　nucleotides and most preferably less than 30 nucleotides. Preferably the probe is from about 6 nucleotides to about 200 nucleotides, preferably from about 15 to about 50 nucleotides, more preferably from about 17 to 30 nucleotides and most preferably from about 20 to 25 nucleotides. Preferably the fragments can be used in polymerase chain reaction (PCR), various hybridization procedures or microarray procedures to identify or

15　amplify identical or related parts of mRNA or DNA molecules. A fragment or segment may uniquely identify each polynucleotide sequence of the present invention. Preferably the fragment comprises a sequence substantially similar to any one of SEQ ID NOs:1-20.

Probes may, for example, be used to determine whether specific mRNA molecules are present in a cell or tissue or to isolate similar nucleic acid sequences from

20　chromosomal DNA as described by Walsh et al. (Walsh, P.S. et al., 1992, PCR Methods Appl 1:241-250). They may be labeled by nick translation, Klenow fill-in reaction, PCR, or other methods well known in the art. Probes of the present invention, their preparation and/or labeling are elaborated in Sambrook, J. et al., 1989, Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY; or Ausubel, F.M. et al., 1989,

25　Current Protocols in Molecular Biology, John Wiley & Sons, New York NY, both of which are incorporated herein by reference in their entirety.

The nucleic acid sequences of the present invention also include the sequence information from the nucleic acid sequences of SEQ ID NO:1-739. The sequence information can be a segment of any one of SEQ ID NO:1-739 that uniquely identifies or

30　represents the sequence information of that sequence of SEQ ID NO:1-739. One such segment can be a twenty-mer nucleic acid sequence because the probability that a twenty-

mer is fully matched in the human genome is 1 in 300. In the human genome, there are

three billion base pairs in one set of chromosomes. Because 4^{20} possible twenty-mers

exist, there are 300 times more twenty-mers than there are base pairs in a set of human

chromosomes. Using the same analysis, the probability for a seventeen-mer to be fully

5   matched in the human genome is approximately 1 in 5. When these segments are used in

arrays for expression studies, fifteen-mer segments can be used. The probability that the

fifteen-mer is fully matched in the expressed sequences is also approximately one in five

because expressed sequences comprise less than approximately 5% of the entire genome

·sequence.

10   Similarly, when using sequence information for detecting a single mismatch, a

segment can be a twenty-five mer. The probability that the twenty-five mer would appear in

a human genome with a single mismatch is calculated by multiplying the probability for a

full match $(1 \div 4^{25})$ times the increased probability for mismatch at each nucleotide position

(3×25). The probability that an eighteen mer with a single mismatch can be detected in an

15   array for expression studies is approximately one in five. The probability that a twenty-mer

with a single mismatch can be detected in a human genome is approximately one in five.

The term "open reading frame," ORF, means a series of nucleotide triplets coding

for amino acids without any termination codons and is a sequence translatable into

protein.

20   The terms "operably linked" or "operably associated" refer to functionally related

nucleic acid sequences. For example, a promoter is operably associated or operably

linked with a coding sequence if the promoter controls the transcription of the coding

sequence. While operably linked nucleic acid sequences can be contiguous and in the

same reading frame, certain genetic elements e.g. repressor genes are not contiguously

25   linked to the coding sequence but still control transcription/translation of the coding

sequence.

The term "pluripotent" refers to the capability of a cell to differentiate into a

number of differentiated cell types that are present in an adult organism. A pluripotent

cell ·is restricted in its differentiation capability in comparison to a totipotent cell.

30   The terms "polypeptide" or "peptide" or "amino acid sequence" refer to an

oligopeptide, peptide, polypeptide or protein sequence or fragment thereof and to

naturally occurring or synthetic molecules. A polypeptide "fragment," "portion," or "segment" is a stretch of amino acid residues of at least about 5 amino acids, preferably at least about 7 amino acids, more preferably at least about 9 amino acids and most preferably at least about 17 or more amino acids. The peptide preferably is not greater than about 200 amino acids, more preferably less than 150 amino acids and most preferably less than 100 amino acids. Preferably the peptide is from about 5 to about 200 amino acids. To be active, any polypeptide must have sufficient length to display biological and/or immunological activity.

The term "naturally occurring polypeptide" refers to polypeptides produced by cells that have not been genetically engineered and specifically contemplates various polypeptides arising from post-translational modifications of the polypeptide including, but not limited to, acetylation, carboxylation, glycosylation, phosphorylation, lipidation and acylation.

The term "translated protein coding portion" means a sequence which encodes for the full length protein which may include any leader sequence or any processing sequence.

The term "mature protein coding sequence" means a sequence which encodes a peptide or protein without a signal or leader sequence. The "mature protein portion" means that portion of the protein which does not include a signal or leader sequence. The peptide may have been produced by processing in the cell which removes any leader/signal sequence. The mature protein portion may or may not include the initial methionine residue. The methionine residue may be removed from the protein during processing in the cell. The peptide may be produced synthetically or the protein may have been produced using a polynucleotide only encoding for the mature protein coding sequence.

The term "derivative" refers to polypeptides chemically modified by such techniques as ubiquitination, labeling (e.g., with radionuclides or various enzymes), covalent polymer attachment such as pegylation (derivatization with polyethylene glycol) and insertion or substitution by chemical synthesis of amino acids such as ornithine, which do not normally occur in human proteins.

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The term "variant"(or "analog") refers to any polypeptide differing from naturally occurring polypeptides by amino acid insertions, deletions, and substitutions, created using, e g., recombinant DNA techniques. Guidance in determining which amino acid residues may be replaced, added or deleted without abolishing activities of interest, may

5   be found by comparing the sequence of the particular polypeptide with that of homologous peptides and minimizing the number of amino acid sequence changes made in regions of high homology (conserved regions) or by replacing amino acids with consensus sequence.

Alternatively, recombinant variants encoding these same or similar polypeptides

10   may be synthesized or selected by making use of the "redundancy" in the genetic code. Various codon substitutions, such as the silent changes which produce various restriction sites, may be introduced to optimize cloning into a plasmid or viral vector or expression in a particular prokaryotic or eukaryotic system. Mutations in the polynucleotide sequence may be reflected in the polypeptide or domains of other peptides added to the

15   polypeptide to modify the properties of any part of the polypeptide, to change characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate.

Preferably, amino acid "substitutions" are the result of replacing one amino acid with another amino acid having similar structural and/or chemical properties, i.e.,

20   conservative amino acid replacements. "Conservative" amino acid substitutions may be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity, and/or the amphipathic nature of the residues involved. For example, nonpolar (hydrophobic) amino acids include alanine, leucine, isoleucine, valine, proline, phenylalanine, tryptophan, and methionine; polar neutral amino acids include glycine,

25   serine, threonine, cysteine, tyrosine, asparagine, and glutamine; positively charged (basic) amino acids include arginine, lysine, and histidine; and negatively charged (acidic) amino acids include aspartic acid and glutamic acid. "Insertions" or "deletions" are preferably in the range of about 1 to 20 amino acids, more preferably 1 to 10 amino acids. The variation allowed may be experimentally determined by systematically making insertions,

30   deletions, or substitutions of amino acids in a polypeptide molecule using recombinant DNA techniques and assaying the resulting recombinant variants for activity.

Alternatively, where alteration of function is desired, insertions, deletions or non-conservative alterations can be engineered to produce altered polypeptides. Such alterations can, for example, alter one or more of the biological functions or biochemical characteristics of the polypeptides of the invention. For example, such alterations may change polypeptide characteristics such as ligand-binding affinities, interchain affinities, or degradation/turnover rate. Further, such alterations can be selected so as to generate polypeptides that are better suited for expression, scale up and the like in the host cells chosen for expression. For example, cysteine residues can be deleted or substituted with another amino acid residue in order to eliminate disulfide bridges.

The terms "purified" or "substantially purified" as used herein denotes that the indicated nucleic acid or polypeptide is present in the substantial absence of other biological macromolecules, e.g., polynucleotides, proteins, and the like. In one embodiment, the polynucleotide or polypeptide is purified such that it constitutes at least 95% by weight, more preferably at least 99% by weight, of the indicated biological macromolecules present (but water, buffers, and other small molecules, especially molecules having a molecular weight of less than 1000 daltons, can be present).

The term "isolated" as used herein refers to a nucleic acid or polypeptide separated from at least one other component (e.g., nucleic acid or polypeptide) present with the nucleic acid or polypeptide in its natural source. In one embodiment, the nucleic acid or polypeptide is found in the presence of (if anything) only a solvent, buffer, ion, or other component normally present in a solution of the same. The terms "isolated" and "purified" do not encompass nucleic acids or polypeptides present in their natural source.

The term "recombinant," when used herein to refer to a polypeptide or protein, means that a polypeptide or protein is derived from recombinant (e.g., microbial, insect, or mammalian) expression systems. "Microbial" refers to recombinant polypeptides or proteins made in bacterial or fungal (e.g., yeast) expression systems. As a product, "recombinant microbial" defines a polypeptide or protein essentially free of native endogenous substances and unaccompanied by associated native glycosylation. Polypeptides or proteins expressed in most bacterial cultures, e.g., E. coli, will be free of glycosylation modifications; polypeptides or proteins expressed in yeast will have a glycosylation pattern in general different from those expressed in mammalian cells.

The term "recombinant expression vehicle or vector" refers to a plasmid or phage or virus or vector, for expressing a polypeptide from a DNA (RNA) sequence. An expression vehicle can comprise a transcriptional unit comprising an assembly of (1) a genetic element or elements having a regulatory role in gene expression, for example,

5   promoters or enhancers, (2) a structural or coding sequence which is transcribed into mRNA and translated into protein, and (3) appropriate transcription initiation and termination sequences. Structural units intended for use in yeast or eukaryotic expression systems preferably include a leader sequence enabling extracellular secretion of translated protein by a host cell. Alternatively, where recombinant protein is expressed

10   without a leader or transport sequence, it may include an amino terminal methionine residue. This residue may or may not be subsequently cleaved from the expressed recombinant protein to provide a final product.

The term "recombinant expression system" means host cells which have stably integrated a recombinant transcriptional unit into chromosomal DNA or carry the

15   recombinant transcriptional unit extrachromosomally. Recombinant expression systems as defined herein will express heterologous polypeptides or proteins upon induction of the regulatory elements linked to the DNA segment or synthetic gene to be expressed. This term also means host cells which have stably integrated a recombinant genetic element or elements having a regulatory role in gene expression, for example, promoters

20   or enhancers. Recombinant expression systems as defined herein will express polypeptides or proteins endogenous to the cell upon induction of the regulatory elements linked to the endogenous DNA segment or gene to be expressed. The cells can be prokaryotic or eukaryotic.

The term "secreted" includes a protein that is transported across or through a

25   membrane, including transport as a result of signal sequences in its amino acid sequence when it is expressed in a suitable host cell. "Secreted" proteins include without limitation proteins secreted wholly (e.g., soluble proteins) or partially (e.g., receptors) from the cell in which they are expressed. "Secreted" proteins also include without limitation proteins that are transported across the membrane of the endoplasmic reticulum. "Secreted"

30   proteins are also intended to include proteins containing non-typical signal sequences (e.g. Interleukin-1 Beta, see Krasney, P.A. and Young, P.R. (1992) Cytokine 4(2):134

-143) and factors released from damaged cells (e.g. Interleukin-1 Receptor Antagonist, see Arend, W.P. et. al. (1998) Annu. Rev. Immunol. 16:27-55)

Where desired, an expression vector may be designed to contain a "signal or leader sequence" which will direct the polypeptide through the membrane of a cell. Such a sequence may be naturally present on the polypeptides of the present invention or provided from heterologous protein sources by recombinant DNA techniques.

The term "stringent" is used to refer to conditions that are commonly understood in the art as stringent. Stringent conditions can include highly stringent conditions (i.e., hybridization to filter-bound DNA in 0.5 M $NaHPO_4$, 7% sodium dodecyl sulfate (SDS), 1 mM EDTA at 65°C, and washing in 0.1X SSC/0.1% SDS at 68°C), and moderately stringent conditions (i.e., washing in 0.2X SSC/0.1% SDS at 42°C). Other exemplary hybridization conditions are described herein in the examples.

In instances of hybridization of deoxyoligonucleotides, additional exemplary stringent hybridization conditions include washing in 6X SSC/0.05% sodium pyrophosphate at 37°C (for 14-base oligonucleotides), 48°C (for 17-base oligos), 55°C (for 20-base oligonucleotides), and 60°C (for 23-base oligonucleotides).

As used herein, "substantially equivalent" can refer both to nucleotide and amino acid sequences, for example a mutant sequence, that varies from a reference sequence by one or more substitutions, deletions, or additions, the net effect of which does not result in an adverse functional dissimilarity between the reference and subject sequences. Typically, such a substantially equivalent sequence varies from one of those listed herein by no more than about 35% (*i.e.*, the number of individual residue substitutions, additions, and/or deletions in a substantially equivalent sequence, as compared to the corresponding reference sequence, divided by the total number of residues in the substantially equivalent sequence is about 0.35 or less). Such a sequence is said to have 65% sequence identity to the listed sequence. In one embodiment, a substantially equivalent, *e.g.*, mutant, sequence of the invention varies from a listed sequence by no more than 30% (70% sequence identity); in a variation of this embodiment, by no more than 25% (75% sequence identity); and in a further variation of this embodiment, by no more than 20% (80% sequence identity) and in a further variation of this embodiment, by no more than 10% (90% sequence identity) and in a further variation of this embodiment,

by no more that 5% (95% sequence identity). Substantially equivalent, *e.g.*, mutant, amino acid sequences according to the invention preferably have at least 80% sequence identity with a listed amino acid sequence, more preferably at least 90% sequence identity. Substantially equivalent nucleotide sequences of the invention can have lower

5   percent sequence identities, taking into account, for example, the redundancy or degeneracy of the genetic code. Preferably, nucleotide sequence has at least about 65% identity, more preferably at least about 75% identity, and most preferably at least about 95% identity. For the purposes of the present invention, sequences having substantially equivalent biological activity and substantially equivalent expression characteristics are

10   considered substantially equivalent. For the purposes of determining equivalence, truncation of the mature sequence (*e.g.*, via a mutation which creates a spurious stop codon) should be disregarded. Sequence identity may be determined, e.g., using the Jotun Hein method (Hein, J. (1990) Methods Enzymol. 183:626-645). Identity between sequences can also be determined by other methods known in the art, e.g. by varying

15   hybridization conditions.

The term "totipotent" refers to the capability of a cell to differentiate into all of the cell types of an adult organism.

The term "transformation" means introducing DNA into a suitable host cell so that the DNA is replicable, either as an extrachromosomal element, or by chromosomal

20   integration. The term "transfection" refers to the taking up of an expression vector by a suitable host cell, whether or not any coding sequences are in fact expressed. The term "infection" refers to the introduction of nucleic acids into a suitable host cell by use of a virus or viral vector.

As used herein, an "uptake modulating fragment," UMF, means a series of

25   nucleotides which mediate the uptake of a linked DNA fragment into a cell. UMFs can be readily identified using known UMFs as a target sequence or target motif with the computer-based systems described below. The presence and activity of a UMF can be confirmed by attaching the suspected UMF to a marker sequence. The resulting nucleic acid molecule is then incubated with an appropriate host under appropriate conditions and

30   the uptake of the marker sequence is determined. As described above, a UMF will increase the frequency of uptake of a linked marker sequence.

Each of the above terms is meant to encompass all that is described for each, unless the context dictates otherwise.

4.2 NUCLEIC ACIDS OF THE INVENTION

5   Nucleotide sequences of the invention are set forth in the Sequence Listing.

The isolated polynucleotides of the invention include a polynucleotide comprising the nucleotide sequences of SEQ ID NO:1-739 ; a polynucleotide encoding any one of the peptide sequences of SEQ ID NO:740-1478; and a polynucleotide comprising the nucleotide sequence encoding the mature protein coding sequence of the polypeptides of

10   any one of SEQ ID NO:740-1478. The polynucleotides of the present invention also include, but are not limited to, a polynucleotide that hybridizes under stringent conditions to (a) the complement of any of the nucleotides sequences of SEQ ID NO:1-739 ; (b) nucleotide sequences encoding any one of the amino acid sequences set forth in the Sequence Listing; (c) a polynucleotide which is an allelic variant of any polynucleotide

15   recited above; (d) a polynucleotide which encodes a species homolog of any of the proteins recited above; or (e) a polynucleotide that encodes a polypeptide comprising a specific domain or truncation of the polypeptides of SEQ ID NO: 740-1478. Domains of interest may depend on the nature of the encoded polypeptide; e.g., domains in receptor-like polypeptides include ligand-binding, extracellular, transmembrane, or cytoplasmic

20   domains, or combinations thereof; domains in immunoglobulin-like proteins include the variable immunoglobulin-like domains; domains in enzyme-like polypeptides include catalytic and substrate binding domains; and domains in ligand polypeptides include receptor-binding domains.

The polynucleotides of the invention include naturally occurring or wholly or

25   partially synthetic DNA, e.g., cDNA and genomic DNA, and RNA, e.g., mRNA. The polynucleotides may include all of the coding region of the cDNA or may represent a portion of the coding region of the cDNA.

The present invention also provides genes corresponding to the cDNA sequences disclosed herein. The corresponding genes can be isolated in accordance with known

30   methods using the sequence information disclosed herein. Such methods include the preparation of probes or primers from the disclosed sequence information for identification

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and/or amplification of genes in appropriate genomic libraries or other sources of genomic materials. Further 5' and 3' sequence can be obtained using methods known in the art. For example, full length cDNA or genomic DNA that corresponds to any of the polynucleotides of SEQ ID NO:1-739 can be obtained by screening appropriate cDNA or genomic DNA

5   libraries under suitable hybridization conditions using any of the polynucleotides of SEQ ID NO:1-739 or a portion thereof as a probe. Alternatively, the polynucleotides of SEQ ID NO:1-739 may be used as the basis for suitable primer(s) that allow identification and/or amplification of genes in appropriate genomic DNA or cDNA libraries.

The nucleic acid sequences of the invention can be assembled from ESTs and

10   sequences (including cDNA and genomic sequences) obtained from one or more public databases, such as dbEST, gbpri, and UniGene. The EST sequences can provide identifying sequence information, representative fragment or segment information, or novel segment information for the full-length gene.

The polynucleotides of the invention also provide polynucleotides including

15   nucleotide sequences that are substantially equivalent to the polynucleotides recited above. Polynucleotides according to the invention can have, *e.g.*, at least about 65%, at least about 70%, at least about 75%, at least about 80%, more typically at least about 90%, and even more typically at least about 95%, sequence identity to a polynucleotide recited above.

20   Included within the scope of the nucleic acid sequences of the invention are nucleic acid sequence fragments that hybridize under stringent conditions to any of the nucleotide sequences of SEQ ID NO:1-739, or complements thereof, which fragment is greater than about 5 nucleotides, preferably 7 nucleotides, more preferably greater than 9 nucleotides and most preferably greater than 17 nucleotides. Fragments of, e.g. 15, 17, or

25   20 nucleotides or more that are selective for (i.e. specifically hybridize to any one of the polynucleotides of the invention) are contemplated. Probes capable of specifically hybridizing to a polynucleotide can differentiate polynucleotide sequences of the invention from other polynucleotide sequences in the same family of genes or can differentiate human genes from genes of other species, and are preferably based on

30   unique nucleotide sequences.

The sequences falling within the scope of the present invention are not limited to these specific sequences, but also include allelic and species variations thereof. Allelic and species variations can be routinely determined by comparing the sequence provided SEQ ID NO:1-739, a representative fragment thereof, or a nucleotide sequence at least 90%

5   identical, preferably 95% identical, to SEQ ID NO:1-739 with a sequence from another isolate of the same species. Furthermore, to accommodate codon variability, the invention includes nucleic acid molecules coding for the same amino acid sequences as do the specific ORFs disclosed herein. In other words, in the coding region of an ORF, substitution of one codon for another codon that encodes the same amino acid is expressly contemplated.

10   The nearest neighbor or homology result for the nucleic acids of the present invention, including SEQ ID NO:1-739, can be obtained by searching a database using an algorithm or a program. Preferably, a BLAST which stands for Basic Local Alignment Search Tool is used to search for local sequence alignments (Altshul, S.F. J Mol. Evol. 36 290-300 (1993) and Altschul S.F. et al. J. Mol. Biol. 21:403-410 (1990)). Alternatively a

15   FASTA version 3 search against Genpept, using Fastxy algorithm.

Species homologs (or orthologs) of the disclosed polynucleotides and proteins are also provided by the present invention. Species homologs may be isolated and identified by making suitable probes or primers from the sequences provided herein and screening a suitable nucleic acid source from the desired species.

20   The invention also encompasses allelic variants of the disclosed polynucleotides or proteins; that is, naturally-occurring alternative forms of the isolated polynucleotide which also encode proteins which are identical, homologous or related to that encoded by the polynucleotides.

The nucleic acid sequences of the invention are further directed to sequences

25   which encode variants of the described nucleic acids. These amino acid sequence variants may be prepared by methods known in the art by introducing appropriate nucleotide changes into a native or variant polynucleotide. There are two variables in the construction of amino acid sequence variants: the location of the mutation and the nature of the mutation. Nucleic acids encoding the amino acid sequence variants are preferably

30   constructed by mutating the polynucleotide to encode an amino acid sequence that does not occur in nature. These nucleic acid alterations can be made at sites that differ in the

nucleic acids from different species (variable positions) or in highly conserved regions (constant regions). Sites at such locations will typically be modified in series, *e.g.*, by substituting first with conservative choices (*e.g.*, hydrophobic amino acid to a different hydrophobic amino acid) and then with more distant choices (*e.g.*, hydrophobic amino

5   acid to a charged amino acid), and then deletions or insertions may be made at the target site. Amino acid sequence deletions generally range from about 1 to 30 residues, preferably about 1 to 10 residues, and are typically contiguous. Amino acid insertions include amino- and/or carboxyl-terminal fusions ranging in length from one to one hundred or more residues, as well as intrasequence insertions of single or multiple amino

10   acid residues. Intrasequence insertions may range generally from about 1 to 10 amino residues, preferably from 1 to 5 residues. Examples of terminal insertions include the heterologous signal sequences necessary for secretion or for intracellular targeting in different host cells and sequences such as FLAG or poly-histidine sequences useful for purifying the expressed protein.

15   In a preferred method, polynucleotides encoding the novel amino acid sequences are changed via site-directed mutagenesis. This method uses oligonucleotide sequences to alter a polynucleotide to encode the desired amino acid variant, as well as sufficient adjacent nucleotides on both sides of the changed amino acid to form a stable duplex on either side of the site of being changed. In general, the techniques of site-directed

20   mutagenesis are well known to those of skill in the art and this technique is exemplified by publications such as, Edelman et al., *DNA* 2:183 (1983). A versatile and efficient method for producing site-specific changes in a polynucleotide sequence was published by Zoller and Smith, *Nucleic Acids Res.* 10:6487-6500 (1982). PCR may also be used to create amino acid sequence variants of the novel nucleic acids. When small amounts of

25   template DNA are used as starting material, primer(s) that differs slightly in sequence from the corresponding region in the template DNA can generate the desired amino acid variant. PCR amplification results in a population of product DNA fragments that differ from the polynucleotide template encoding the polypeptide at the position specified by the primer. The product DNA fragments replace the corresponding region in the plasmid

30   and this gives a polynucleotide encoding the desired amino acid variant.

A further technique for generating amino acid variants is the cassette mutagenesis technique described in Wells et al., *Gene* 34:315 (1985); and other mutagenesis techniques well known in the art, such as, for example, the techniques in Sambrook et al., supra, and *Current Protocols in Molecular Biology*, Ausubel et al. Due to the inherent

5 degeneracy of the genetic code, other DNA sequences which encode substantially the same or a functionally equivalent amino acid sequence may be used in the practice of the invention for the cloning and expression of these novel nucleic acids. Such DNA sequences include those which are capable of hybridizing to the appropriate novel nucleic acid sequence under stringent conditions.

10 Polynucleotides encoding preferred polypeptide truncations of the invention can be used to generate polynucleotides encoding chimeric or fusion proteins comprising one or more domains of the invention and heterologous protein sequences.

The polynucleotides of the invention additionally include the complement of any of the polynucleotides recited above. The polynucleotide can be DNA (genomic, cDNA,

15 amplified, or synthetic) or RNA. Methods and algorithms for obtaining such polynucleotides are well known to those of skill in the art and can include, for example, methods for determining hybridization conditions that can routinely isolate polynucleotides of the desired sequence identities.

In accordance with the invention, polynucleotide sequences comprising the

20 mature protein coding sequences corresponding to any one of SEQ ID NO:1-739, or functional equivalents thereof, may be used to generate recombinant DNA molecules that direct the expression of that nucleic acid, or a functional equivalent thereof, in appropriate host cells. Also included are the cDNA inserts of any of the clones identified herein.

25 A polynucleotide according to the invention can be joined to any of a variety of other nucleotide sequences by well-established recombinant DNA techniques (see Sambrook J et al. (1989) Molecular Cloning: A Laboratory Manual, Cold Spring Harbor Laboratory, NY). Useful nucleotide sequences for joining to polynucleotides include an assortment of vectors, e.g., plasmids, cosmids, lambda phage derivatives, phagemids, and

30 the like, that are well known in the art. Accordingly, the invention also provides a vector including a polynucleotide of the invention and a host cell containing the polynucleotide.

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In general, the vector contains an origin of replication functional in at least one organism, convenient restriction endonuclease sites, and a selectable marker for the host cell. Vectors according to the invention include expression vectors, replication vectors, probe generation vectors, and sequencing vectors. A host cell according to the invention can be

5   a prokaryotic or eukaryotic cell and can be a unicellular organism or part of a multicellular organism.

      The present invention further provides recombinant constructs comprising a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-739 or a fragment thereof or any other polynucleotides of the invention. In one embodiment, the

10   recombinant constructs of the present invention comprise a vector, such as a plasmid or viral vector, into which a nucleic acid having any of the nucleotide sequences of SEQ ID NO:1-739 or a fragment thereof is inserted, in a forward or reverse orientation. In the case of a vector comprising one of the ORFs of the present invention, the vector may further comprise regulatory sequences, including for example, a promoter, operably

15   linked to the ORF. Large numbers of suitable vectors and promoters are known to those of skill in the art and are commercially available for generating the recombinant constructs of the present invention. The following vectors are provided by way of example. Bacterial: pBs, phagescript, PsiX174, pBluescript SK, pBs KS, pNH8a, pNH16a, pNH18a, pNH46a (Stratagene); pTrc99A, pKK223-3, pKK233-3, pDR540,

20   pRIT5 (Pharmacia). Eukaryotic: pWLneo, pSV2cat, pOG44, PXTI, pSG (Stratagene) pSVK3, pBPV, pMSG, pSVL (Pharmacia).

      The isolated polynucleotide of the invention may be operably linked to an expression control sequence such as the pMT2 or pED expression vectors disclosed in Kaufman et al., *Nucleic Acids Res.* 19, 4485-4490 (1991), in order to produce the protein

25   recombinantly. Many suitable expression control sequences are known in the art. General methods of expressing recombinant proteins are also known and are exemplified in R. Kaufman, *Methods in Enzymology* 185, 537-566 (1990). As defined herein "operably linked" means that the isolated polynucleotide of the invention and an expression control sequence are situated within a vector or cell in such a way that the

30   protein is expressed by a host cell which has been transformed (transfected) with the ligated polynucleotide/expression control sequence.

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Promoter regions can be selected from any desired gene using CAT (chloramphenicol transferase) vectors or other vectors with selectable markers. Two appropriate vectors are pKK232-8 and pCM7. Particular named bacterial promoters include lacI, lacZ, T3, T7, gpt, lambda PR, and trc. Eukaryotic promoters include CMV immediate early, HSV thymidine kinase, early and late SV40, LTRs from retrovirus, and mouse metallothionein-I. Selection of the appropriate vector and promoter is well within the level of ordinary skill in the art. Generally, recombinant expression vectors will include origins of replication and selectable markers permitting transformation of the host cell, e.g., the ampicillin resistance gene of *E. coli* and *S. cerevisiae* TRP1 gene, and a promoter derived from a highly-expressed gene to direct transcription of a downstream structural sequence. Such promoters can be derived from operons encoding glycolytic enzymes such as 3-phosphoglycerate kinase (PGK), a-factor, acid phosphatase, or heat shock proteins, among others. The heterologous structural sequence is assembled in appropriate phase with translation initiation and termination sequences, and preferably, a leader sequence capable of directing secretion of translated protein into the periplasmic space or extracellular medium. Optionally, the heterologous sequence can encode a fusion protein including an amino terminal identification peptide imparting desired characteristics, e.g., stabilization or simplified purification of expressed recombinant product. Useful expression vectors for bacterial use are constructed by inserting a structural DNA sequence encoding a desired protein together with suitable translation initiation and termination signals in operable reading phase with a functional promoter. The vector will comprise one or more phenotypic selectable markers and an origin of replication to ensure maintenance of the vector and to, if desirable, provide amplification within the host. Suitable prokaryotic hosts for transformation include *E. coli*, *Bacillus subtilis*, *Salmonella typhimurium* and various species within the genera *Pseudomonas*, *Streptomyces*, and *Staphylococcus*, although others may also be employed as a matter of choice.

As a representative but non-limiting example, useful expression vectors for bacterial use can comprise a selectable marker and bacterial origin of replication derived from commercially available plasmids comprising genetic elements of the well known cloning vector pBR322 (ATCC 37017). Such commercial vectors include, for example,

pKK223-3 (Pharmacia Fine Chemicals, Uppsala, Sweden) and GEM 1 (Promega Biotech, Madison, WI, USA). These pBR322 "backbone" sections are combined with an appropriate promoter and the structural sequence to be expressed. Following transformation of a suitable host strain and growth of the host strain to an appropriate cell

5   density, the selected promoter is induced or derepressed by appropriate means (*e.g.*, temperature shift or chemical induction) and cells are cultured for an additional period. Cells are typically harvested by centrifugation, disrupted by physical or chemical means, and the resulting crude extract retained for further purification.

Polynucleotides of the invention can also be used to induce immune responses.

10   For example, as described in Fan et al., *Nat. Biotech.* 17:870-872 (1999), incorporated herein by reference, nucleic acid sequences encoding a polypeptide may be used to generate antibodies against the encoded polypeptide following topical administration of naked plasmid DNA or following injection, and preferably intramuscular injection of the DNA. The nucleic acid sequences are preferably inserted in a recombinant expression

15   vector and may be in the form of naked DNA.

4.3 ANTISENSE

Another aspect of the invention pertains to isolated antisense nucleic acid molecules that are hybridizable to or complementary to the nucleic acid molecule

20   comprising the nucleotide sequence of SEQ ID NO:1-739, or fragments, analogs or derivatives thereof. An "antisense" nucleic acid comprises a nucleotide sequence that is complementary to a "sense" nucleic acid encoding a protein, *e.g.*, complementary to the coding strand of a double-stranded cDNA molecule or complementary to an mRNA sequence. In specific aspects, antisense nucleic acid molecules are provided that

25   comprise a sequence complementary to at least about 10, 25, 50, 100, 250 or 500 nucleotides or an entire coding strand, or to only a portion thereof. Nucleic acid molecules encoding fragments, homologs, derivatives and analogs of a protein of any of SEQ ID NO:740-1478 or antisense nucleic acids complementary to a nucleic acid sequence of SEQ ID NO:1-739 are additionally provided.

30   In one embodiment, an antisense nucleic acid molecule is antisense to a "coding region" of the coding strand of a nucleotide sequence of the invention. The term "coding

region" refers to the region of the nucleotide sequence comprising codons which are translated into amino acid residues. In another embodiment, the antisense nucleic acid molecule is antisense to a "noncoding region" of the coding strand of a nucleotide sequence of the invention. The term "noncoding region" refers to 5' and 3' sequences which flank the coding region that are not translated into amino acids (i.e., also referred to as 5' and 3' untranslated regions).

Given the coding strand sequences encoding a nucleic acid disclosed herein (e.g., SEQ ID NO:1-739 , antisense nucleic acids of the invention can be designed according to the rules of Watson and Crick or Hoogsteen base pairing. The antisense nucleic acid molecule can be complementary to the entire coding region of a mRNA, but more preferably is an oligonucleotide that is antisense to only a portion of the coding or noncoding region of a mRNA. For example, the antisense oligonucleotide can be complementary to the region surrounding the translation start site of a mRNA. An antisense oligonucleotide can be, for example, about 5, 10, 15, 20, 25, 30, 35, 40, 45 or 50 nucleotides in length. An antisense nucleic acid of the invention can be constructed using chemical synthesis or enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid (e.g., an antisense oligonucleotide) can be chemically synthesized using naturally occurring nucleotides or variously modified nucleotides designed to increase the biological stability of the molecules or to increase the physical stability of the duplex formed between the antisense and sense nucleic acids, e.g., phosphorothioate derivatives and acridine substituted nucleotides can be used.

Examples of modified nucleotides that can be used to generate the antisense nucleic acid include: 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, hypoxanthine, xanthine, 4-acetylcytosine, 5-(carboxyhydroxylmethyl) uracil, 5-carboxymethylaminomethyl-2-thiouridine, 5-carboxymethylaminomethyluracil, dihydrouracil, beta-D-galactosylqueosine, inosine, N6-isopentenyladenine, 1-methylguanine, 1-methylinosine, 2,2-dimethylguanine, 2-methyladenine, 2-methylguanine, 3-methylcytosine, 5-methylcytosine, N6-adenine, 7-methylguanine, 5-methylaminomethyluracil, 5-methoxyaminomethyl-2-thiouracil, beta-D-mannosylqueosine, 5'-methoxycarboxymethyluracil, 5-methoxyuracil, 2-methylthio-N6-isopentenyladenine, uracil-5-oxyacetic acid (v), wybutoxosine,

pseudouracil, queosine, 2-thiocytosine, 5-methyl-2-thiouracil, 2-thiouracil, 4-thiouracil,
5-methyluracil, uracil-5-oxyacetic acid methylester, uracil-5-oxyacetic acid (v),
5-methyl-2-thiouracil, 3-(3-amino-3-N-2-carboxypropyl) uracil, (acp3)w, and
2,6-diaminopurine. Alternatively, the antisense nucleic acid can be produced biologically

5   using an expression vector into which a nucleic acid has been subcloned in an antisense
orientation (i.e., RNA transcribed from the inserted nucleic acid will be of an antisense
orientation to a target nucleic acid of interest, described further in the following
subsection).

The antisense nucleic acid molecules of the invention are typically administered

10   to a subject or generated in situ such that they hybridize with or bind to cellular mRNA
and/or genomic DNA encoding a protein according to the invention to thereby inhibit
expression of the protein, e.g., by inhibiting transcription and/or translation. The
hybridization can be by conventional nucleotide complementarity to form a stable duplex,
or, for example, in the case of an antisense nucleic acid molecule that binds to DNA

15   duplexes, through specific interactions in the major groove of the double helix. An
example of a route of administration of antisense nucleic acid molecules of the invention
includes direct injection at a tissue site. Alternatively, antisense nucleic acid molecules
can be modified to target selected cells and then administered systemically. For example,
for systemic administration, antisense molecules can be modified such that they

20   specifically bind to receptors or antigens expressed on a selected cell surface, e.g., by
linking the antisense nucleic acid molecules to peptides or antibodies that bind to cell
surface receptors or antigens. The antisense nucleic acid molecules can also be delivered
to cells using the vectors described herein. To achieve sufficient intracellular
concentrations of antisense molecules, vector constructs in which the antisense nucleic

25   acid molecule is placed under the control of a strong pol II or pol III promoter are
preferred.

In yet another embodiment, the antisense nucleic acid molecule of the invention is
an α-anomeric nucleic acid molecule. An α-anomeric nucleic acid molecule forms
specific double-stranded hybrids with complementary RNA in which, contrary to the usual

30   β-units, the strands run parallel to each other (Gaultier et al. (1987) Nucleic Acids Res 15:
6625-6641). The antisense nucleic acid molecule can also comprise a

2'-o-methylribonucleotide (Inoue *et al.* (1987) *Nucleic Acids Res* 15: 6131-6148) or a chimeric RNA -DNA analogue (Inoue *et al.* (1987) *FEBS Lett* 215: 327-330).

4.4 RIBOZYMES AND PNA MOIETIES

5   In still another embodiment, an antisense nucleic acid of the invention is a ribozyme. Ribozymes are catalytic RNA molecules with ribonuclease activity that are capable of cleaving a single-stranded nucleic acid, such as a mRNA, to which they have a complementary region. Thus, ribozymes (*e.g.*, hammerhead ribozymes (described in Haselhoff and Gerlach (1988) *Nature* 334:585-591)) can be used to catalytically cleave a

10   mRNA transcripts to thereby inhibit translation of a mRNA. A ribozyme having specificity for a nucleic acid of the invention can be designed based upon the nucleotide sequence of a DNA disclosed herein (*i.e.*, SEQ ID NO:1-739). For example, a derivative of a Tetrahymena L-19 IVS RNA can be constructed in which the nucleotide sequence of the active site is complementary to the nucleotide sequence to be cleaved in a

15   SECX-encoding mRNA. See, *e.g.*, Cech *et al.* U.S. Pat. No. 4,987,071; and Cech *et al.* U.S. Pat. No. 5,116,742. Alternatively, SECX mRNA can be used to select a catalytic RNA having a specific ribonuclease activity from a pool of RNA molecules. See, *e.g.*, Bartel *et al.*, (1993) *Science* 261:1411-1418.

Alternatively, gene expression can be inhibited by targeting nucleotide sequences

20   complementary to the regulatory region (*e.g.*, promoter and/or enhancers) to form triple helical structures that prevent transcription of the gene in target cells. See generally, Helene. (1991) *Anticancer Drug Des*. 6: 569-84; Helene. *et al.* (1992) *Ann. N.Y. Acad. Sci.* 660:27-36; and Maher (1992) *Bioassays* 14: 807-15.

In various embodiments, the nucleic acids of the invention can be modified at the

25   base moiety, sugar moiety or phosphate backbone to improve, *e.g.*, the stability, hybridization, or solubility of the molecule. For example, the deoxyribose phosphate backbone of the nucleic acids can be modified to generate peptide nucleic acids (see Hyrup *et al.* (1996) *Bioorg Med Chem* 4: 5-23). As used herein, the terms "peptide nucleic acids" or "PNAs" refer to nucleic acid mimics, *e.g.*, DNA mimics, in which the

30   deoxyribose phosphate backbone is replaced by a pseudopeptide backbone and only the four natural nucleobases are retained. The neutral backbone of PNAs has been shown to

allow for specific hybridization to DNA and RNA under conditions of low ionic strength. The synthesis of PNA oligomers can be performed using standard solid phase peptide synthesis protocols as described in Hyrup *et al.* (1996) above; Perry-O'Keefe *et al.* (1996) *PNAS* 93: 14670-675.

5   PNAs of the invention can be used in therapeutic and diagnostic applications. For example, PNAs can be used as antisense or antigene agents for sequence-specific modulation of gene expression by, *e.g.*, inducing transcription or translation arrest or inhibiting replication. PNAs of the invention can also be used, *e.g.*, in the analysis of single base pair mutations in a gene by, *e.g.*, PNA directed PCR clamping; as artificial

10   restriction enzymes when used in combination with other enzymes, *e.g.*, S1 nucleases (Hyrup B. (1996) above); or as probes or primers for DNA sequence and hybridization (Hyrup *et al.* (1996), above; Perry-O'Keefe (1996), above).

In another embodiment, PNAs of the invention can be modified, *e.g.*, to enhance their stability or cellular uptake, by attaching lipophilic or other helper groups to PNA, by

15   the formation of PNA-DNA chimeras, or by the use of liposomes or other techniques of drug delivery known in the art. For example, PNA-DNA chimeras can be generated that may combine the advantageous properties of PNA and DNA. Such chimeras allow DNA recognition enzymes, *e.g.*, RNase H and DNA polymerases, to interact with the DNA portion while the PNA portion would provide high binding affinity and specificity.

20   PNA-DNA chimeras can be linked using linkers of appropriate lengths selected in terms of base stacking, number of bonds between the nucleobases, and orientation (Hyrup (1996) above). The synthesis of PNA-DNA chimeras can be performed as described in Hyrup (1996) above and Finn *et al.* (1996) *Nucl Acids Res* 24: 3357-63. For example, a DNA chain can be synthesized on a solid support using standard phosphoramidite

25   coupling chemistry, and modified nucleoside analogs, *e.g.*, 5'-(4-methoxytrityl)amino-5'-deoxy-thymidine phosphoramidite, can be used between the PNA and the 5' end of DNA (Mag *et al.* (1989) *Nucl Acid Res* 17: 5973-88). PNA monomers are then coupled in a stepwise manner to produce a chimeric molecule with a 5' PNA segment and a 3' DNA segment (Finn *et al.* (1996) above). Alternatively,

30   chimeric molecules can be synthesized with a 5' DNA segment and a 3' PNA segment. See, Petersen *et al.* (1975) *Bioorg Med Chem Lett* 5: 1119-11124.

In other embodiments, the oligonucleotide may include other appended groups such as peptides (e.g., for targeting host cell receptors in vivo), or agents facilitating transport across the cell membrane (see, e.g., Letsinger et al., 1989, Proc. Natl. Acad. Sci. U.S.A. 86:6553-6556; Lemaitre et al., 1987, Proc. Natl. Acad. Sci. 84:648-652; PCT

5   Publication No. WO88/09810) or the blood-brain barrier (see, e.g., PCT Publication No. WO89/10134). In addition, oligonucleotides can be modified with hybridization triggered cleavage agents (See, e.g., Krol et al., 1988, BioTechniques 6:958-976) or intercalating agents. (See, e.g., Zon, 1988, Pharm. Res. 5: 539-549). To this end, the oligonucleotide may be conjugated to another molecule, e.g., a peptide, a hybridization triggered

10   cross-linking agent, a transport agent, a hybridization-triggered cleavage agent, etc.

4.5 HOSTS

The present invention further provides host cells genetically engineered to contain the polynucleotides of the invention. For example, such host cells may contain nucleic

15   acids of the invention introduced into the host cell using known transformation, transfection or infection methods. The present invention still further provides host cells genetically engineered to express the polynucleotides of the invention, wherein such polynucleotides are in operative association with a regulatory sequence heterologous to the host cell which drives expression of the polynucleotides in the cell.

20   Knowledge of nucleic acid sequences allows for modification of cells to permit, or increase, expression of endogenous polypeptide. Cells can be modified (e.g., by homologous recombination) to provide increased polypeptide expression by replacing, in whole or in part, the naturally occurring promoter with all or part of a heterologous promoter so that the cells express the polypeptide at higher levels. The heterologous

25   promoter is inserted in such a manner that it is operatively linked to the encoding sequences. See, for example, PCT International Publication No. WO94/12650, PCT International Publication No. WO92/20808, and PCT International Publication No. WO91/09955. It is also contemplated that, in addition to heterologous promoter DNA, amplifiable marker DNA (e.g., ada, dhfr, and the multifunctional CAD gene which

30   encodes carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron DNA may be inserted along with the heterologous promoter DNA. If

linked to the coding sequence, amplification of the marker DNA by standard selection methods results in co-amplification of the desired protein coding sequences in the cells.

The host cell can be a higher eukaryotic host cell, such as a mammalian cell, a lower eukaryotic host cell, such as a yeast cell, or the host cell can be a prokaryotic cell,

5   such as a bacterial cell. Introduction of the recombinant construct into the host cell can be effected by calcium phosphate transfection, DEAE, dextran mediated transfection, or electroporation (Davis, L. et al., *Basic Methods in Molecular Biology* (1986)). The host cells containing one of the polynucleotides of the invention, can be used in conventional manners to produce the gene product encoded by the isolated fragment (in the case of an

10   ORF) or can be used to produce a heterologous protein under the control of the EMF.

Any host/vector system can be used to express one or more of the ORFs of the present invention. These include, but are not limited to, eukaryotic hosts such as HeLa cells, Cv-1 cell, COS cells, 293 cells, and Sf9 cells, as well as prokaryotic host such as *E. coli* and *B. subtilis*. The most preferred cells are those which do not normally express the

15   particular polypeptide or protein or which expresses the polypeptide or protein at low natural level. Mature proteins can be expressed in mammalian cells, yeast, bacteria, or other cells under the control of appropriate promoters. Cell-free translation systems can also be employed to produce such proteins using RNAs derived from the DNA constructs of the present invention. Appropriate cloning and expression vectors for use with

20   prokaryotic and eukaryotic hosts are described by Sambrook, et al., in Molecular Cloning: A Laboratory Manual, Second Edition, Cold Spring Harbor, New York (1989), the disclosure of which is hereby incorporated by reference.

Various mammalian cell culture systems can also be employed to express recombinant protein. Examples of mammalian expression systems include the COS-7

25   lines of monkey kidney fibroblasts, described by Gluzman, Cell 23:175 (1981). Other cell lines capable of expressing a compatible vector are, for example, the C127, monkey COS cells, Chinese Hamster Ovary (CHO) cells, human kidney 293 cells, human epidermal A431 cells, human Colo205 cells, 3T3 cells, CV-1 cells, other transformed primate cell lines, normal diploid cells, cell strains derived from *in vitro* culture of

30   primary tissue, primary explants, HeLa cells, mouse L cells, BHK, HL-60, U937, HaK or Jurkat cells. Mammalian expression vectors will comprise an origin of replication, a

suitable promoter and also any necessary ribosome binding sites, polyadenylation site, splice donor and acceptor sites, transcriptional termination sequences, and 5′ flanking nontranscribed sequences. DNA sequences derived from the SV40 viral genome, for example, SV40 origin, early promoter, enhancer, splice, and polyadenylation sites may be

5   used to provide the required nontranscribed genetic elements. Recombinant polypeptides and proteins produced in bacterial culture are usually isolated by initial extraction from cell pellets, followed by one or more salting-out, aqueous ion exchange or size exclusion chromatography steps. Protein refolding steps can be used, as necessary, in completing configuration of the mature protein. Finally, high performance liquid chromatography

10   (HPLC) can be employed for final purification steps. Microbial cells employed in expression of proteins can be disrupted by any convenient method, including freeze-thaw cycling, sonication, mechanical disruption, or use of cell lysing agents.

Alternatively, it may be possible to produce the protein in lower eukaryotes such as yeast or insects or in prokaryotes such as bacteria. Potentially suitable yeast strains

15   include *Saccharomyces cerevisiae, Schizosaccharomyces pombe, Kluyveromyces* strains, *Candida*, or any yeast strain capable of expressing heterologous proteins. Potentially suitable bacterial strains include *Escherichia coli, Bacillus subtilis, Salmonella typhimurium*, or any bacterial strain capable of expressing heterologous proteins. If the protein is made in yeast or bacteria, it may be necessary to modify the protein produced

20   therein, for example by phosphorylation or glycosylation of the appropriate sites, in order to obtain the functional protein. Such covalent attachments may be accomplished using known chemical or enzymatic methods.

In another embodiment of the present invention, cells and tissues may be engineered to express an endogenous gene comprising the polynucleotides of the

25   invention under the control of inducible regulatory elements, in which case the regulatory sequences of the endogenous gene may be replaced by homologous recombination. As described herein, gene targeting can be used to replace a gene's existing regulatory region with a regulatory sequence isolated from a different gene or a novel regulatory sequence synthesized by genetic engineering methods. Such regulatory sequences may be

30   comprised of promoters, enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional initiation sites, regulatory protein binding sites or combinations

of said sequences. Alternatively, sequences which affect the structure or stability of the RNA or protein produced may be replaced, removed, added, or otherwise modified by targeting. These sequence include polyadenylation signals, mRNA stability elements, splice sites, leader sequences for enhancing or modifying transport or secretion properties

5   of the protein, or other sequences which alter or improve the function or stability of protein or RNA molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the gene under the control of the new regulatory sequence, e.g., inserting a new promoter or enhancer or both upstream of a gene. Alternatively, the targeting event may be a

10   simple deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory element. Alternatively, the targeting event may replace an existing element; for example, a tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are added. In all cases, the

15   identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the host cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively

20   selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial

25   xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International

30   Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

4.6 POLYPEPTIDES OF THE INVENTION

The isolated polypeptides of the invention include, but are not limited to, a polypeptide comprising: the amino acid sequences set forth as any one of SEQ ID NO:740-1478 or an amino acid sequence encoded by any one of the nucleotide sequences SEQ ID NO:1-739 or the corresponding full length or mature protein. Polypeptides of the invention also include polypeptides preferably with biological or immunological activity that are encoded by: (a) a polynucleotide having any one of the nucleotide sequences set forth in SEQ ID NO:1-739 or (b) polynucleotides encoding any one of the amino acid sequences set forth as SEQ ID NO:740-1478 or (c) polynucleotides that hybridize to the complement of the polynucleotides of either (a) or (b) under stringent hybridization conditions. The invention also provides biologically active or immunologically active variants of any of the amino acid sequences set forth as SEQ ID NO:740-1478 or the corresponding full length or mature protein; and "substantial equivalents" thereof (e.g., with at least about 65%, at least about 70%, at least about 75%, at least about 80%, at least about 85%, at least about 90%, typically at least about 95%, more typically at least about 98%, or most typically at least about 99% amino acid identity) that retain biological activity. Polypeptides encoded by allelic variants may have a similar, increased, or decreased activity compared to polypeptides comprising SEQ ID NO:740-1478.

Fragments of the proteins of the present invention which are capable of exhibiting biological activity are also encompassed by the present invention. Fragments of the protein may be in linear form or they may be cyclized using known methods, for example, as described in H. U. Saragovi, et al., Bio/Technology 10, 773-778 (1992) and in R. S. McDowell, et al., J. Amer. Chem. Soc. 114, 9245-9253 (1992), both of which are incorporated herein by reference. Such fragments may be fused to carrier molecules such as immunoglobulins for many purposes, including increasing the valency of protein binding sites.

The present invention also provides both full-length and mature forms (for example, without a signal sequence or precursor sequence) of the disclosed proteins. The protein coding sequence is identified in the sequence listing by translation of the

disclosed nucleotide sequences. The mature form of such protein may be obtained by expression of a full-length polynucleotide in a suitable mammalian cell or other host cell. The sequence of the mature form of the protein is also determinable from the amino acid sequence of the full-length form. Where proteins of the present invention are membrane

5   bound, soluble forms of the proteins are also provided. In such forms, part or all of the regions causing the proteins to be membrane bound are deleted so that the proteins are fully secreted from the cell in which they are expressed.

Protein compositions of the present invention may further comprise an acceptable carrier, such as a hydrophilic, *e.g.*, pharmaceutically acceptable, carrier.

10   The present invention further provides isolated polypeptides encoded by the nucleic acid fragments of the present invention or by degenerate variants of the nucleic acid fragments of the present invention. By "degenerate variant" is intended nucleotide fragments which differ from a nucleic acid fragment of the present invention (*e.g.*, an ORF) by nucleotide sequence but, due to the degeneracy of the genetic code, encode an

15   identical polypeptide sequence. Preferred nucleic acid fragments of the present invention are the ORFs that encode proteins.

A variety of methodologies known in the art can be utilized to obtain any one of the isolated polypeptides or proteins of the present invention. At the simplest level, the amino acid sequence can be synthesized using commercially available peptide

20   synthesizers. The synthetically-constructed protein sequences, by virtue of sharing primary, secondary or tertiary structural and/or conformational characteristics with proteins may possess biological properties in common therewith, including protein activity. This technique is particularly useful in producing small peptides and fragments of larger polypeptides. Fragments are useful, for example, in generating antibodies

25   against the native polypeptide. Thus, they may be employed as biologically active or immunological substitutes for natural, purified proteins in screening of therapeutic compounds and in immunological processes for the development of antibodies.

The polypeptides and proteins of the present invention can alternatively be purified from cells which have been altered to express the desired polypeptide or protein.

30   As used herein, a cell is said to be altered to express a desired polypeptide or protein when the cell, through genetic manipulation, is made to produce a polypeptide or protein

which it normally does not produce or which the cell normally produces at a lower level. One skilled in the art can readily adapt procedures for introducing and expressing either recombinant or synthetic sequences into eukaryotic or prokaryotic cells in order to generate a cell which produces one of the polypeptides or proteins of the present

5   invention.

The invention also relates to methods for producing a polypeptide comprising growing a culture of host cells of the invention in a suitable culture medium, and purifying the protein from the cells or the culture in which the cells are grown. For example, the methods of the invention include a process for producing a polypeptide in

10   which a host cell containing a suitable expression vector that includes a polynucleotide of the invention is cultured under conditions that allow expression of the encoded polypeptide. The polypeptide can be recovered from the culture, conveniently from the culture medium, or from a lysate prepared from the host cells and further purified. Preferred embodiments include those in which the protein produced by such process is a

15   full length or mature form of the protein.

In an alternative method, the polypeptide or protein is purified from bacterial cells which naturally produce the polypeptide or protein. One skilled in the art can readily follow known methods for isolating polypeptides and proteins in order to obtain one of the isolated polypeptides or proteins of the present invention. These include, but

20   are not limited to, immunochromatography, HPLC, size-exclusion chromatography, ion-exchange chromatography, and immuno-affinity chromatography. See, *e.g.*, Scopes, *Protein Purification: Principles and Practice*, Springer-Verlag (1994); Sambrook, et al., in Molecular Cloning: *A Laboratory Manual*; Ausubel et al., *Current Protocols in Molecular Biology*. Polypeptide fragments that retain biological/immunological activity

25   include fragments comprising greater than about 100 amino acids, or greater than about 200 amino acids, and fragments that encode specific protein domains.

The purified polypeptides can be used in *in vitro* binding assays which are well known in the art to identify molecules which bind to the polypeptides. These molecules include but are not limited to, for e.g., small molecules, molecules from combinatorial

30   libraries, antibodies or other proteins. The molecules identified in the binding assay are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models

that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

In addition, the peptides of the invention or molecules capable of binding to the peptides may be complexed with toxins, e.g., ricin or cholera, or with other compounds that are toxic to cells. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity of the binding molecule for SEQ ID NO:740-1478.

The protein of the invention may also be expressed as a product of transgenic animals, e.g., as a component of the milk of transgenic cows, goats, pigs, or sheep which are characterized by somatic or germ cells containing a nucleotide sequence encoding the protein.

The proteins provided herein also include proteins characterized by amino acid sequences similar to those of purified proteins but into which modification are naturally provided or deliberately engineered. For example, modifications, in the peptide or DNA sequence, can be made by those skilled in the art using known techniques. Modifications of interest in the protein sequences may include the alteration, substitution, replacement, insertion or deletion of a selected amino acid residue in the coding sequence. For example, one or more of the cysteine residues may be deleted or replaced with another amino acid to alter the conformation of the molecule. Techniques for such alteration, substitution, replacement, insertion or deletion are well known to those skilled in the art (see, e.g., U.S. Pat. No. 4,518,584). Preferably, such alteration, substitution, replacement, insertion or deletion retains the desired activity of the protein. Regions of the protein that are important for the protein function can be determined by various methods known in the art including the alanine-scanning method which involved systematic substitution of single or strings of amino acids with alanine, followed by testing the resulting alanine-containing variant for biological activity. This type of analysis determines the importance of the substituted amino acid(s) in biological activity. Regions of the protein that are important for protein function may be determined by the eMATRIX program.

Other fragments and derivatives of the sequences of proteins which would be expected to retain protein activity in whole or in part and are useful for screening or other

immunological methodologies may also be easily made by those skilled in the art given the disclosures herein. Such modifications are encompassed by the present invention.

The protein may also be produced by operably linking the isolated polynucleotide of the invention to suitable control sequences in one or more insect expression vectors, and employing an insect expression system. Materials and methods for baculovirus/insect cell expression systems are commercially available in kit form from, e.g., Invitrogen, San Diego, Calif., U.S.A. (the MaxBat™ kit), and such methods are well known in the art, as described in Summers and Smith, Texas Agricultural Experiment Station Bulletin No. 1555 (1987), incorporated herein by reference. As used herein, an insect cell capable of expressing a polynucleotide of the present invention is "transformed."

The protein of the invention may be prepared by culturing transformed host cells under culture conditions suitable to express the recombinant protein. The resulting expressed protein may then be purified from such culture (i.e., from culture medium or cell extracts) using known purification processes, such as gel filtration and ion exchange chromatography. The purification of the protein may also include an affinity column containing agents which will bind to the protein; one or more column steps over such affinity resins as concanavalin A-agarose, heparin-toyopearl™ or Cibacrom blue 3GA Sepharose™; one or more steps involving hydrophobic interaction chromatography using such resins as phenyl ether, butyl ether, or propyl ether; or immunoaffinity chromatography.

Alternatively, the protein of the invention may also be expressed in a form which will facilitate purification. For example, it may be expressed as a fusion protein, such as those of maltose binding protein (MBP), glutathione-S-transferase (GST) or thioredoxin (TRX), or as a His tag. Kits for expression and purification of such fusion proteins are commercially available from New England BioLab (Beverly, Mass.), Pharmacia (Piscataway, N.J.) and Invitrogen, respectively. The protein can also be tagged with an epitope and subsequently purified by using a specific antibody directed to such epitope. One such epitope ("FLAG®") is commercially available from Kodak (New Haven, Conn.).

Finally, one or more reverse-phase high performance liquid chromatography (RP-HPLC) steps employing hydrophobic RP-HPLC media, *e.g.*, silica gel having pendant methyl or other aliphatic groups, can be employed to further purify the protein. Some or all of the foregoing purification steps, in various combinations, can also be employed to

5   provide a substantially homogeneous isolated recombinant protein. The protein thus purified is substantially free of other mammalian proteins and is defined in accordance with the present invention as an "isolated protein."

The polypeptides of the invention include analogs (variants). This embraces fragments, as well as peptides in which one or more amino acids has been deleted,

10   inserted, or substituted. Also, analogs of the polypeptides of the invention embrace fusions of the polypeptides or modifications of the polypeptides of the invention, wherein the polypeptide or analog is fused to another moiety or moieties, e.g., targeting moiety or another therapeutic agent. Such analogs may exhibit improved properties such as activity and/or stability. Examples of moieties which may be fused to the polypeptide or an

15   analog include, for example, targeting moieties which provide for the delivery of polypeptide to pancreatic cells, e.g., antibodies to pancreatic cells, antibodies to immune cells such as T-cells, monocytes, dendritic cells, granulocytes, etc., as well as receptor and ligands expressed on pancreatic or immune cells. Other moieties which may be fused to the polypeptide include therapeutic agents which are used for treatment, for

20   example, immunosuppressive drugs such as cyclosporin, SK506, azathioprine, CD3 antibodies and steroids. Also, polypeptides may be fused to immune modulators, and other cytokines such as alpha or beta interferon.

4.6.1 DETERMINING POLYPEPTIDE AND POLYNUCLEOTIDE
25   IDENTITY AND SIMILARITY

Preferred identity and/or similarity are designed to give the largest match between the sequences tested. Methods to determine identity and similarity are codified in computer programs including, but are not limited to, the GCG program package, including GAP (Devereux, J., et al., Nucleic Acids Research 12(1):387 (1984); Genetics

30   Computer Group, University of Wisconsin, Madison, WI), BLASTP, BLASTN, BLASTX, FASTA (Altschul, S.F. et al., J. Molec. Biol. 215:403-410 (1990), PSI-BLAST

· (Altschul S.F. et al., Nucleic Acids Res. vol. 25, pp. 3389-3402, herein incorporated by

reference), eMatrix software (Wu et al., J. Comp. Biol., Vol. 6,.pp. 219-235 (1999),

herein incorporated by reference), eMotif software (Nevill-Manning et al, ISMB-97, Vol.

4, pp. 202-209, herein incorporated by reference), pFam software (Sonnhammer et al.,

5   Nucleic Acids Res., Vol. 26(1), pp. 320-322 (1998), herein incorporated by reference)

and the Kyte-Doolittle hydrophobocity prediction algorithm (J. Mol Biol, 157, pp. 105-31

(1982), incorporated herein by reference). The BLAST programs are publicly available

from the National Center for Biotechnology Information (NCBI) and other sources

(BLAST Manual, Altschul, S., et al. NCB NLM NIH Bethesda, MD 20894; Altschul, S.,

10   et al., J. Mol. Biol. 215:403-410 (1990).

4.7 CHIMERIC AND FUSION PROTEINS

The invention also provides chimeric or fusion proteins. As used herein, a

"chimeric protein" or "fusion protein" comprises a polypeptide of the invention

operatively linked to another polypeptide. Within a fusion protein the polypeptide

15   according to the invention can correspond to all or a portion of a protein according to the

invention. In one embodiment, a fusion protein comprises at least one biologically active   .

portion of a protein according to the invention. In another embodiment, a fusion protein

comprises at least two biologically active portions of a protein according to the

invention. Within the fusion protein, the term "operatively linked" is intended to indicate

20   that the polypeptide according to the invention and the other polypeptide are fused

in-frame to each other. The polypeptide can be fused to the N-terminus or C-terminus.

For example, in one embodiment a fusion protein comprises a polypeptide   .

according to the invention operably linked to the extracellular domain of a second

protein.

25   In another embodiment, the fusion protein is a GST-fusion protein in which the

polypeptide sequences of the invention are fused to the C-terminus of the GST (i.e.,

glutathione S-transferase) sequences.

In another embodiment, the fusion protein is an immunoglobulin fusion protein in

which the polypeptide sequences according to the invention comprises one or more

30   domains are fused to sequences derived from a member of the immunoglobulin protein

family. The immunoglobulin fusion proteins of the invention can be incorporated into

pharmaceutical compositions and administered to a subject to inhibit an interaction between a ligand and a protein of the invention on the surface of a cell, to thereby suppress signal transduction *in vivo.*.The immunoglobulin fusion proteins can be used to affect the bioavailability of a cognate ligand. Inhibition of the ligand/protein interaction

5   may be useful therapeutically for both the treatment of proliferative and differentiative disorders, *e.g.,* cancer as well as modulating (*e.g.,* promoting or inhibiting) cell survival. Moreover, the immunoglobulin fusion proteins of the invention can be used as immunogens to produce antibodies in a subject, to purify ligands, and in screening assays to identify molecules that inhibit the interaction of a polypeptide of the invention with a

10   ligand.

A chimeric or fusion protein of the invention can be produced by standard recombinant DNA techniques. For example, DNA fragments coding for the different polypeptide sequences are ligated together in-frame in accordance with conventional techniques, *e.g.,* by employing blunt-ended or stagger-ended termini for ligation,

15   restriction enzyme digestion to provide for appropriate termini, filling-in of cohesive ends as appropriate, alkaline phosphatase treatment to avoid undesirable joining, and enzymatic ligation. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers. Alternatively, PCR amplification of gene fragments can be carried out using anchor primers that give rise to

20   complementary overhangs between two consecutive gene fragments that can subsequently be annealed and reamplified to generate a chimeric gene sequence (see, for example, Ausubel et al. (eds.) CURRENT PROTOCOLS IN MOLECULAR BIOLOGY, John Wiley & Sons, 1992). Moreover, many expression vectors are commercially available that already encode a fusion moiety (*e.g.,* a GST polypeptide). A nucleic acid encoding

25   a polypeptide of the invention can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the protein of the invention.

4.8 GENE THERAPY

Mutations in the polynucleotides of the invention gene may result in loss of

30   normal function of the encoded protein. The invention thus provides gene therapy to restore normal activity of the polypeptides of the invention; or to treat disease states

involving polypeptides of the invention. Delivery of a functional gene encoding
polypeptides of the invention to appropriate cells is effected *ex vivo, in situ,* or *in vivo* by
use of vectors, and more particularly viral vectors (e.g., adenovirus, adeno-associated
virus, or a retrovirus), or *ex vivo* by use of physical DNA transfer methods (e.g.,

5   liposomes or chemical treatments). See, for example, Anderson, Nature, supplement to
vol. 392, no. 6679, pp.25-20 (1998). For additional reviews of gene therapy technology
see Friedmann, Science, 244: 1275-1281 (1989); Verma, Scientific American: 68-84
(1990); and Miller, Nature, 357: 455-460 (1992). Introduction of any one of the
nucleotides of the present invention or a gene encoding the polypeptides of the present

10   invention can also be accomplished with extrachromosomal substrates (transient
expression) or artificial chromosomes (stable expression). Cells may also be cultured *ex
vivo* in the presence of proteins of the present invention in order to proliferate or to
produce a desired effect on or activity in such cells. Treated cells can then be introduced
in vivo for therapeutic purposes. Alternatively, it is contemplated that in other human

15   disease states, preventing the expression of or inhibiting the activity of polypeptides of
the invention will be useful in treating the disease states. It is contemplated that antisense
therapy or gene therapy could be applied to negatively regulate the expression of
polypeptides of the invention.

Other methods inhibiting expression of a protein include the introduction of
20   antisense molecules to the nucleic acids of the present invention, their complements, or their
translated RNA sequences, by methods known in the art. Further, the polypeptides of the
present invention can be inhibited by using targeted deletion methods, or the insertion of a
negative regulatory element such as a silencer, which is tissue specific.

The present invention still further provides cells genetically engineered *in vivo* to
25   express the polynucleotides of the invention, wherein such polynucleotides are in operative
association with a regulatory sequence heterologous to the host cell which drives expression
of the polynucleotides in the cell. These methods can be used to increase or decrease the
expression of the polynucleotides of the present invention.

Knowledge of DNA sequences provided by the invention allows for modification of
30   cells to permit, increase, or decrease, expression of endogenous polypeptide. Cells can be
modified (e.g., by homologous recombination) to provide increased polypeptide expression

by replacing, in whole or in part, the naturally occurring promoter with all or part of a
heterologous promoter so that the cells express the protein at higher levels. The heterologous
promoter is inserted in such a manner that it is operatively linked to the desired protein
encoding sequences. See, for example, PCT International Publication No. WO 94/12650,

5   PCT International Publication No. WO 92/20808, and PCT International Publication No.
WO 91/09955. It is also contemplated that, in addition to heterologous promoter DNA,
amplifiable marker DNA (e.g., ada, dhfr, and the multifunctional CAD gene which encodes
carbamyl phosphate synthase, aspartate transcarbamylase, and dihydroorotase) and/or intron
DNA may be inserted along with the heterologous promoter DNA. If linked to the desired

10   protein coding sequence, amplification of the marker DNA by standard selection methods
results in co-amplification of the desired protein coding sequences in the cells.

In another embodiment of the present invention, cells and tissues may be engineered
to express an endogenous gene comprising the polynucleotides of the invention under the
control of inducible regulatory elements, in which case the regulatory sequences of the

15   endogenous gene may be replaced by homologous recombination. As described herein,
gene targeting can be used to replace a gene's existing regulatory region with a regulatory
sequence isolated from a different gene or a novel regulatory sequence synthesized by
genetic engineering methods. Such regulatory sequences may be comprised of promoters,
enhancers, scaffold-attachment regions, negative regulatory elements, transcriptional

20   initiation sites, regulatory protein binding sites or combinations of said sequences.
Alternatively, sequences which affect the structure or stability of the RNA or protein
produced may be replaced, removed, added, or otherwise modified by targeting. These
sequences include polyadenylation signals, mRNA stability elements, splice sites, leader
sequences for enhancing or modifying transport or secretion properties of the protein, or

25   other sequences which alter or improve the function or stability of protein or RNA
molecules.

The targeting event may be a simple insertion of the regulatory sequence, placing the
gene under the control of the new regulatory sequence, e.g., inserting a new promoter or
enhancer or both upstream of a gene. Alternatively, the targeting event may be a simple

30   deletion of a regulatory element, such as the deletion of a tissue-specific negative regulatory
element. Alternatively, the targeting event may replace an existing element; for example, a

tissue-specific enhancer can be replaced by an enhancer that has broader or different cell-type specificity than the naturally occurring elements. Here, the naturally occurring sequences are deleted and new sequences are added. In all cases, the identification of the targeting event may be facilitated by the use of one or more selectable marker genes that are

5 contiguous with the targeting DNA, allowing for the selection of cells in which the exogenous DNA has integrated into the cell genome. The identification of the targeting event may also be facilitated by the use of one or more marker genes exhibiting the property of negative selection, such that the negatively selectable marker is linked to the exogenous DNA, but configured such that the negatively selectable marker flanks the targeting

10 sequence, and such that a correct homologous recombination event with sequences in the host cell genome does not result in the stable integration of the negatively selectable marker. Markers useful for this purpose include the Herpes Simplex Virus thymidine kinase (TK) gene or the bacterial xanthine-guanine phosphoribosyl-transferase (gpt) gene.

The gene targeting or gene activation techniques which can be used in accordance

15 with this aspect of the invention are more particularly described in U.S. Patent No. 5,272,071 to Chappel; U.S. Patent No. 5,578,461 to Sherwin et al.; International Application No. PCT/US92/09627 (WO93/09222) by Selden et al.; and International Application No. PCT/US90/06436 (WO91/06667) by Skoultchi et al., each of which is incorporated by reference herein in its entirety.

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4.9 TRANSGENIC ANIMALS

In preferred methods to determine biological functions of the polypeptides of the invention in vivo, one or more genes provided by the invention are either over expressed or inactivated in the germ line of animals using homologous recombination [Capecchi,

25 Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals, preferably non-human mammals, can be prepared as described in U.S. Patent No.

30 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in

43

disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals, are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

5   Transgenic animals can be prepared wherein all or part of a promoter of the polynucleotides of the invention is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or even replacing the homologous promoter to provide for increased

10   protein expression. The homologous promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

          The polynucleotides of the present invention also make possible the development, through, e.g., homologous recombination or knock out strategies, of animals that fail to

15   express polypeptides of the invention or that express a variant polypeptide. Such animals are useful as models for studying the *in vivo* activities of polypeptide as well as for studying modulators of the polypeptides of the invention.

          In preferred methods to determine biological functions of the polypeptides of the invention *in vivo*, one or more genes provided by the invention are either over expressed

20   or inactivated in the germ line of animals using homologous recombination [Capecchi, Science 244:1288-1292 (1989)]. Animals in which the gene is over expressed, under the regulatory control of exogenous or endogenous promoter elements, are known as transgenic animals. Animals in which an endogenous gene has been inactivated by homologous recombination are referred to as "knockout" animals. Knockout animals,

25   preferably non-human mammals, can be prepared as described in U.S. Patent No. 5,557,032, incorporated herein by reference. Transgenic animals are useful to determine the roles polypeptides of the invention play in biological processes, and preferably in disease states. Transgenic animals are useful as model systems to identify compounds that modulate lipid metabolism. Transgenic animals, preferably non-human mammals,

30   are produced using methods as described in U.S. Patent No 5,489,743 and PCT Publication No. WO94/28122, incorporated herein by reference.

Transgenic animals can be prepared wherein all or part of the polynucleotides of the invention promoter is either activated or inactivated to alter the level of expression of the polypeptides of the invention. Inactivation can be carried out using homologous recombination methods described above. Activation can be achieved by supplementing or

5   even replacing the homologous promoter to provide for increased protein expression. The homologous promoter can be supplemented by insertion of one or more heterologous enhancer elements known to confer promoter activation in a particular tissue.

4.10 USES AND BIOLOGICAL ACTIVITY

10   The polynucleotides and proteins of the present invention are expected to exhibit one or more of the uses or biological activities (including those associated with assays cited herein) identified herein. Uses or activities described for proteins of the present invention may be provided by administration or use of such proteins or of polynucleotides encoding such proteins (such as, for example, in gene therapies or

15   vectors suitable for introduction of DNA). The mechanism underlying the particular condition or pathology will dictate whether the polypeptides of the invention, the polynucleotides of the invention or modulators (activators or inhibitors) thereof would be beneficial to the subject in need of treatment. Thus, "therapeutic compositions of the invention" include compositions comprising isolated polynucleotides (including

20   recombinant DNA molecules, cloned genes and degenerate variants thereof) or polypeptides of the invention (including full length protein, mature protein and truncations or domains thereof), or compounds and other substances that modulate the overall activity of the target gene products, either at the level of target gene/protein expression or target protein activity. Such modulators include polypeptides, analogs,

25   (variants), including fragments and fusion proteins, antibodies and other binding proteins; chemical compounds that directly or indirectly activate or inhibit the polypeptides of the invention (identified, e.g., via drug screening assays as described herein); antisense polynucleotides and polynucleotides suitable for triple helix formation; and in particular antibodies or other binding partners that specifically recognize one or more epitopes of

30   the polypeptides of the invention.

The polypeptides of the present invention may likewise be involved in cellular activation or in one of the other physiological pathways described herein.

4.10.1 RESEARCH USES AND UTILITIES

5   The polynucleotides provided by the present invention can be used by the research community for various purposes. The polynucleotides can be used to express recombinant protein for analysis, characterization or therapeutic use; as markers for tissues in which the corresponding protein is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in disease

10   states); as molecular weight markers on gels; as chromosome markers or tags (when labeled) to identify chromosomes or to map related gene positions; to compare with endogenous DNA sequences in patients to identify potential genetic disorders; as probes to hybridize and thus discover novel, related DNA sequences; as a source of information to derive PCR primers for genetic fingerprinting; as a probe to "subtract-out" known

15   sequences in the process of discovering other novel polynucleotides; for selecting and making oligomers for attachment to a "gene chip" or other support, including for examination of expression patterns; to raise anti-protein antibodies using DNA immunization techniques; and as an antigen to raise anti-DNA antibodies or elicit another immune response. Where the polynucleotide encodes a protein which binds or

20   potentially binds to another protein (such as, for example, in a receptor-ligand interaction), the polynucleotide can also be used in interaction trap assays (such as, for example, that described in Gyuris et al., Cell 75:791-803 (1993)) to identify polynucleotides encoding the other protein with which binding occurs or to identify inhibitors of the binding interaction.

25   The polypeptides provided by the present invention can similarly be used in assays to determine biological activity, including in a panel of multiple proteins for high-throughput screening; to raise antibodies or to elicit another immune response; as a reagent (including the labeled reagent) in assays designed to quantitatively determine levels of the protein (or its receptor) in biological fluids; as markers for tissues in which

30   the corresponding polypeptide is preferentially expressed (either constitutively or at a particular stage of tissue differentiation or development or in a disease state); and, of

course, to isolate correlative receptors or ligands. Proteins involved in these binding interactions can also be used to screen for peptide or small molecule inhibitors or ago: of the binding interaction.

Any or all of these research utilities are capable of being developed into reager 5 grade or kit format for commercialization as research products.

Methods for performing the uses listed above are well known to those skilled ir the art. References disclosing such methods include without limitation "Molecular Cloning: A Laboratory Manual", 2d ed., Cold Spring Harbor Laboratory Press, Sambrook, J., E. F. Fritsch and T. Maniatis eds., 1989, and "Methods in Enzymology: 10 Guide to Molecular Cloning Techniques", Academic Press, Berger, S. L. and A. R. Kimmel eds., 1987.

4.10.2 NUTRITIONAL USES

Polynucleotides and polypeptides of the present invention can also be used as 15 nutritional sources or supplements. Such uses include without limitation use as a protein or amino acid supplement, use as a carbon source, use as a nitrogen source and use as a source of carbohydrate. In such cases the polypeptide or polynucleotide of the invention can be added to the feed of a particular organism or can be administered as a separate solid or liquid preparation, such as in the form of powder, pills, solutions, suspensions or capsules. In the 20 case of microorganisms, the polypeptide or polynucleotide of the invention can be added to the medium in or on which the microorganism is cultured.

4.10.3 CYTOKINE AND CELL PROLIFERATION/DIFFERENTIATION ACTIVITY

25 A polypeptide of the present invention may exhibit activity relating to cytokine, cell proliferation (either inducing or inhibiting) or cell differentiation (either inducing or inhibiting) activity or may induce production of other cytokines in certain cell populations. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Many protein factors discovered to date, including all known cytokines, have 30 exhibited activity in one or more factor-dependent cell proliferation assays, and hence the assays serve as a convenient confirmation of cytokine activity. The activity of therapeutic

compositions of the present invention is evidenced by any one of a number of routine

factor dependent cell proliferation assays for cell lines including, without limitation, 32D,

DA2, DA1G, T10, B9, B9/11, BaF3, MC9/G, M+(preB M+), 2E8, RB5, DA1, 123,

T1165, HT2, CTLL2, TF-1, Mo7e, CMK, HUVEC, and Caco. Therapeutic compositions

5   of the invention can be used in the following:

Assays for T-cell or thymocyte proliferation include without limitation those

described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D.

H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and

Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function 3.1-3.19;

10   Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500,

1986; Bertagnolli et al., J. Immunol. 145:1706-1712, 1990; Bertagnolli et al., Cellular

Immunology 133:327-341, 1991; Bertagnolli, et al., I. Immunol. 149:3778-3783, 1992;

Bowman et al., I. Immunol. 152:1756-1761, 1994.

Assays for cytokine production and/or proliferation of spleen cells, lymph node

15   cells or thymocytes include, without limitation, those described in: Polyclonal T cell

stimulation, Kruisbeek, A. M. and Shevach, E. M. In Current Protocols in Immunology.

J. E. e.a. Coligan eds. Vol 1 pp. 3.12.1-3.12.14, John Wiley and Sons, Toronto. 1994; and

Measurement of mouse and human interleukin-γ, Schreiber, R. D. In Current Protocols in

Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.8.1-6.8.8, John Wiley and Sons, Toronto.

20   1994.

Assays for proliferation and differentiation of hematopoietic and lymphopoietic

cells include, without limitation, those described in: Measurement of Human and Murine

Interleukin 2 and Interleukin 4, Bottomly, K., Davis, L. S. and Lipsky, P. E. In Current

Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 6.3.1-6.3.12, John Wiley and

25   Sons, Toronto. 1991; deVries et al., J. Exp. Med. 173:1205-1211, 1991; Moreau et al.,

Nature 336:690-692, 1988; Greenberger et al., Proc. Natl. Acad. Sci. U.S.A.

80:2931-2938, 1983; Measurement of mouse and human interleukin 6--Nordan, R. In

Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.6.1-6.6.5, John Wiley

and Sons, Toronto. 1991; Smith et al., Proc. Natl. Aced. Sci. U.S.A. 83:1857-1861, 1986;

30   Measurement of human Interleukin 11--Bennett, F., Giannotti, J., Clark, S. C. and Turner,

K. J. In Current Protocols in Immunology. J. E. Coligan eds. Vol 1 pp. 6.15.1 John

Wiley and Sons, Toronto. 1991; Measurement of mouse and human Interleukin
9--Ciarletta, A., Giannotti, J., Clark, S. C. and Turner, K. J. In Current Protocols in
Immunology. J. E. Coligan eds. Vol 1 pp. 6.13.1, John Wiley and Sons, Toronto. 1991.

      Assays for T-cell clone responses to antigens (which will identify, among others,

5   proteins that affect APC-T cell interactions as well as direct T-cell effects by measuring
proliferation and cytokine production) include, without limitation, those described in:
Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H.
Margulies, E. M. Shevach, W Strober, Pub. Greene Publishing Associates and
Wiley-Interscience (Chapter 3, *In Vitro* assays for Mouse Lymphocyte Function; Chapter

10   6, Cytokines and their cellular receptors; Chapter 7, Immunologic studies in Humans);
Weinberger et al., Proc. Natl. Acad. Sci. USA 77:6091-6095, 1980; Weinberger et al.,
Eur. J. Immun. 11:405-411, 1981; Takai et al., J. Immunol. 137:3494-3500, 1986; Takai
et al., J. Immunol. 140:508-512, 1988.

15   **4.10.4 STEM CELL GROWTH FACTOR ACTIVITY**

      A polypeptide of the present invention may exhibit stem cell growth factor
activity and be involved in the proliferation, differentiation and survival of pluripotent
and totipotent stem cells including primordial germ cells, embryonic stem cells,
hematopoietic stem cells and/or germ line stem cells. Administration of the polypeptide

20   of the invention to stem cells *in vivo* or *ex vivo* is expected to maintain and expand cell
populations in a totipotential or pluripotential state which would be useful for re-
engineering damaged or diseased tissues, transplantation, manufacture of bio-
pharmaceuticals and the development of bio-sensors. The ability to produce large
quantities of human cells has important working applications for the production of human

25   proteins which currently must be obtained from non-human sources or donors,
implantation of cells to treat diseases such as Parkinson's, Alzheimer's and other
neurodegenerative diseases; tissues for grafting such as bone marrow, skin, cartilage,
tendons, bone, muscle (including cardiac muscle), blood vessels, cornea, neural cells,
gastrointestinal cells and others; and organs for transplantation such as kidney, liver,

30   pancreas (including islet cells), heart and lung.

It is contemplated that multiple different exogenous growth factors and/or cytokines may be administered in combination with the polypeptide of the invention to achieve the desired effect, including any of the growth factors listed herein, other stem cell maintenance factors, and specifically including stem cell factor (SCF), leukemia

5   inhibitory factor (LIF), Flt-3 ligand (Flt-3L), any of the interleukins, recombinant soluble IL-6 receptor fused to IL-6, macrophage inflammatory protein 1-alpha (MIP-1-alpha), G-CSF, GM-CSF, thrombopoietin (TPO), platelet factor 4 (PF-4), platelet-derived growth factor (PDGF), neural growth factors and basic fibroblast growth factor (bFGF).

Since totipotent stem cells can give rise to virtually any mature cell type,

10 expansion of these cells in culture will facilitate the production of large quantities of mature cells. Techniques for culturing stem cells are known in the art and administration of polypeptides of the invention, optionally with other growth factors and/or cytokines, is expected to enhance the survival and proliferation of the stem cell populations. This can be accomplished by direct administration of the polypeptide of the invention to the

15 culture medium. Alternatively, stroma cells transfected with a polynucleotide that encodes for the polypeptide of the invention can be used as a feeder layer for the stem cell populations in culture or in vivo. Stromal support cells for feeder layers may include embryonic bone marrow fibroblasts, bone marrow stromal cells, fetal liver cells, or cultured embryonic fibroblasts (see U.S. Patent No. 5,690,926).

20   Stem cells themselves can be transfected with a polynucleotide of the invention to induce autocrine expression of the polypeptide of the invention. This will allow for generation of undifferentiated totipotential/pluripotential stem cell lines that are useful as is or that can then be differentiated into the desired mature cell types. These stable cell lines can also serve as a source of undifferentiated totipotential/pluripotential mRNA to

25 create cDNA libraries and templates for polymerase chain reaction experiments. These studies would allow for the isolation and identification of differentially expressed genes in stem cell populations that regulate stem cell proliferation and/or maintenance.

Expansion and maintenance of totipotent stem cell populations will be useful in the treatment of many pathological conditions. For example, polypeptides of the present

30 invention may be used to manipulate stem cells in culture to give rise to neuroepithelial cells that can be used to augment or replace cells damaged by illness, autoimmune

disease, accidental damage or genetic disorders. The polypeptide of the invention may be useful for inducing the proliferation of neural cells and for the regeneration of nerve and brain tissue, i.e. for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders which involve degeneration,

5   death or trauma to neural cells or nerve tissue. In addition, the expanded stem cell populations can also be genetically altered for gene therapy purposes and to decrease host rejection of replacement tissues after grafting or implantation.

       Expression of the polypeptide of the invention and its effect on stem cells can also be manipulated to achieve controlled differentiation of the stem cells into more

10   differentiated cell types. A broadly applicable method of obtaining pure populations of a specific differentiated cell type from undifferentiated stem cell populations involves the use of a cell-type specific promoter driving a selectable marker. The selectable marker allows only cells of the desired type to survive. For example, stem cells can be induced to differentiate into cardiomyocytes (Wobus et al., Differentiation, 48: 173-182, (1991);

15   Klug et al., J. Clin. Invest., 98(1): 216-224, (1998)) or skeletal muscle cells (Browder, L. W. In: *Principles of Tissue Engineering eds.* Lanza et al., Academic Press (1997)). Alternatively, directed differentiation of stem cells can be accomplished by culturing the stem cells in the presence of a differentiation factor such as retinoic acid and an antagonist of the polypeptide of the invention which would inhibit the effects of

20   endogenous stem cell factor activity and allow differentiation to proceed.

       In vitro cultures of stem cells can be used to determine if the polypeptide of the invention exhibits stem cell growth factor activity. Stem cells are isolated from any one of various cell sources (including hematopoietic stem cells and embryonic stem cells) and cultured on a feeder layer, as described by Thompson et al. Proc. Natl. Acad. Sci, U.S.A.,

25   92: 7844-7848 (1995), in the presence of the polypeptide of the invention alone or in combination with other growth factors or cytokines. The ability of the polypeptide of the invention to induce stem cells proliferation is determined by colony formation on semi-solid support e.g. as described by Bernstein et al., Blood, 77: 2316-2321 (1991).

30   **4.10.5 HEMATOPOIESIS REGULATING ACTIVITY**

51

A polypeptide of the present invention may be involved in regulation of hematopoiesis and, consequently, in the treatment of myeloid or lymphoid cell disorders. Even marginal biological activity in support of colony forming cells or of factor-dependent cell lines indicates involvement in regulating hematopoiesis, e.g. in

5   supporting the growth and proliferation of erythroid progenitor cells alone or in combination with other cytokines, thereby indicating utility, for example, in treating various anemias or for use in conjunction with irradiation/chemotherapy to stimulate the production of erythroid precursors and/or erythroid cells; in supporting the growth and proliferation of myeloid cells such as granulocytes and monocytes/macrophages (i.e.,

10   traditional CSF activity) useful, for example, in conjunction with chemotherapy to prevent or treat consequent myelo-suppression; in supporting the growth and proliferation of megakaryocytes and consequently of platelets thereby allowing prevention or treatment of various platelet disorders such as thrombocytopenia, and generally for use in place of or complimentary to platelet transfusions; and/or in supporting the growth and

15   proliferation of hematopoietic stem cells which are capable of maturing to any and all of the above-mentioned hematopoietic cells and therefore find therapeutic utility in various stem cell disorders (such as those usually treated with transplantation, including, without limitation, aplastic anemia and paroxysmal nocturnal hemoglobinuria), as well as in repopulating the stem cell compartment post irradiation/chemotherapy, either *in-vivo* or

20   *ex-vivo* (i.e., in conjunction with bone marrow transplantation or with peripheral progenitor cell transplantation (homologous or heterologous)) as normal cells or genetically manipulated for gene therapy.

Therapeutic compositions of the invention can be used in the following:

Suitable assays for proliferation and differentiation of various hematopoietic lines

25   are cited above.

Assays for embryonic stem cell differentiation (which will identify, among others, proteins that influence embryonic differentiation hematopoiesis) include, without limitation, those described in: Johansson et al. Cellular Biology 15:141-151, 1995; Keller et al., Molecular and Cellular Biology 13:473-486, 1993; McClanahan et al., Blood

30   81:2903-2915, 1993.

Assays for stem cell survival and differentiation (which will identify, among others, proteins that regulate lympho-hematopoiesis) include, without limitation, those described in: Methylcellulose colony forming assays, Freshney, M. G. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 265-268, Wiley-Liss, Inc., New

5   York, N.Y. 1994; Hirayama et al., Proc. Natl. Acad. Sci. USA 89:5907-5911, 1992; Primitive hematopoietic colony forming cells with high proliferative potential, McNiece, I. K. and Briddell, R. A. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 23-39, Wiley-Liss, Inc., New York, N.Y. 1994; Neben et al., Experimental Hematology 22:353-359, 1994; Cobblestone area forming cell assay, Ploemacher, R. E.

10 In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 1-21, Wiley-Liss, Inc., New York, N.Y. 1994; Long term bone marrow cultures in the presence of stromal cells, Spooncer, E., Dexter, M. and Allen, T. In Culture of Hematopoietic Cells. R. I. Freshney, et al. eds. Vol pp. 163-179, Wiley-Liss, Inc., New York, N.Y. 1994; Long term culture initiating cell assay, Sutherland, H. J. In Culture of Hematopoietic Cells. R. I.

15 Freshney, et al. eds. Vol pp. 139-162, Wiley-Liss, Inc., New York, N.Y. 1994.

4.10.6 TISSUE GROWTH ACTIVITY

A polypeptide of the present invention also may be involved in bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, as well as in wound healing

20 and tissue repair and replacement, and in healing of burns, incisions and ulcers.

A polypeptide of the present invention which induces cartilage and/or bone growth in circumstances where bone is not normally formed, has application in the healing of bone fractures and cartilage damage or defects in humans and other animals. Compositions of a polypeptide, antibody, binding partner, or other modulator of the

25 invention may have prophylactic use in closed as well as open fracture reduction and also in the improved fixation of artificial joints. De novo bone formation induced by an osteogenic agent contributes to the repair of congenital, trauma induced, or oncologic resection induced craniofacial defects, and also is useful in cosmetic plastic surgery.

A polypeptide of this invention may also be involved in attracting bone-forming

30 cells, stimulating growth of bone-forming cells, or inducing differentiation of progenitors of bone-forming cells. Treatment of osteoporosis, osteoarthritis, bone degenerative

disorders, or periodontal disease, such as through stimulation of bone and/or cartilage repair or by blocking inflammation or processes of tissue destruction (collagenase activity, osteoclast activity, etc.) mediated by inflammatory processes may also be possible using the composition of the invention.

5   Another category of tissue regeneration activity that may involve the polypeptide of the present invention is tendon/ligament formation. Induction of tendon/ligament-like tissue or other tissue formation in circumstances where such tissue is not normally formed, has application in the healing of tendon or ligament tears, deformities and other tendon or ligament defects in humans and other animals. Such a preparation employing a

10   tendon/ligament-like tissue inducing protein may have prophylactic use in preventing damage to tendon or ligament tissue, as well as use in the improved fixation of tendon or ligament to bone or other tissues, and in repairing defects to tendon or ligament tissue. De novo tendon/ligament-like tissue formation induced by a composition of the present invention contributes to the repair of congenital, trauma induced, or other tendon or

15   ligament defects of other origin, and is also useful in cosmetic plastic surgery for attachment or repair of tendons or ligaments. The compositions of the present invention may provide environment to attract tendon- or ligament-forming cells, stimulate growth of tendon- or ligament-forming cells, induce differentiation of progenitors of tendon- or ligament-forming cells, or induce growth of tendon/ligament cells or progenitors *ex vivo*

20   for return *in vivo* to effect tissue repair. The compositions of the invention may also be useful in the treatment of tendinitis, carpal tunnel syndrome and other tendon or ligament defects. The compositions may also include an appropriate matrix and/or sequestering agent as a carrier as is well known in the art.

        The compositions of the present invention may also be useful for proliferation of

25   neural cells and for regeneration of nerve and brain tissue, i.e. for the treatment of central and peripheral nervous system diseases and neuropathies, as well as mechanical and traumatic disorders, which involve degeneration, death or trauma to neural cells or nerve tissue. More specifically, a composition may be used in the treatment of diseases of the peripheral nervous system, such as peripheral nerve injuries, peripheral neuropathy and

30   localized neuropathies, and central nervous system diseases, such as Alzheimer's, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager

syndrome. Further conditions which may be treated in accordance with the present

invention include mechanical and traumatic disorders, such as spinal cord disorders, head

trauma and cerebrovascular diseases such as stroke. Peripheral neuropathies resulting

from chemotherapy or other medical therapies may also be treatable using a composition

5   of the invention.

.Compositions of the invention may also be useful to promote better or faster

closure of non-healing wounds, including without limitation pressure ulcers, ulcers

associated with vascular insufficiency, surgical and traumatic wounds, and the like.

Compositions of the present invention may also be involved in the generation or

10   regeneration of other tissues, such as organs (including, for example, pancreas, liver,

intestine, kidney, skin, endothelium), muscle (smooth, skeletal or cardiac) and vascular

(including vascular endothelium) tissue, or for promoting the growth of cells comprising

such tissues. Part of the desired effects may be by inhibition or modulation of fibrotic

scarring may allow normal tissue to regenerate. A polypeptide of the present invention

15   may also exhibit angiogenic activity.

A composition of the present invention may also be useful for gut protection or

regeneration and treatment of lung or liver fibrosis, reperfusion injury in various tissues,

and conditions resulting from systemic cytokine damage.

A composition of the present invention may also be useful for promoting or

20   inhibiting differentiation of tissues described above from precursor tissues or cells; or for

inhibiting the growth of tissues described above.

Therapeutic compositions of the invention can be used in the following:

Assays for tissue generation activity include, without limitation, those described

in: International Patent Publication No. WO95/16035 (bone, cartilage, tendon);

25   International Patent Publication No. WO95/05846 (nerve, neuronal); International Patent

Publication No. WO91/07491 (skin, endothelium).

Assays for wound healing activity include, without limitation, those described in:

Winter, Epidermal Wound Healing, pps. 71-112 (Maibach, H. I. and Rovee, D. T., eds.),

Year Book Medical Publishers, Inc., Chicago, as modified by Eaglstein and Mertz, J.

30   Invest. Dermatol 71:382-84 (1978).

4.10.7 IMMUNE STIMULATING OR SUPPRESSING ACTIVITY

A polypeptide of the present invention may also exhibit immune stimulating or immune suppressing activity, including without limitation the activities for which assays are described herein. A polynucleotide of the invention can encode a polypeptide

5   exhibiting such activities. A protein may be useful in the treatment of various immune deficiencies and disorders (including severe combined immunodeficiency (SCID)), e.g., in regulating (up or down) growth and proliferation of T and/or B lymphocytes, as well as effecting the cytolytic activity of NK cells and other cell populations. These immune deficiencies may be genetic or be caused by viral (e.g., HIV) as well as bacterial or

10   fungal infections, or may result from autoimmune disorders. More specifically, infectious diseases causes by viral, bacterial, fungal or other infection may be treatable using a protein of the present invention, including infections by HIV, hepatitis viruses, herpes viruses, mycobacteria, Leishmania spp., malaria spp. and various fungal infections such as candidiasis. Of course, in this regard, proteins of the present invention may also be

15   useful where a boost to the immune system generally may be desirable, i.e., in the treatment of cancer.

Autoimmune disorders which may be treated using a protein of the present invention include, for example, connective tissue disease, multiple sclerosis, systemic lupus erythematosus, rheumatoid arthritis, autoimmune pulmonary inflammation,

20   Guillain-Barre syndrome, autoimmune thyroiditis, insulin dependent diabetes mellitis, myasthenia gravis, graft-versus-host disease and autoimmune inflammatory eye disease. Such a protein (or antagonists thereof, including antibodies) of the present invention may also to be useful in the treatment of allergic reactions and conditions (e.g., anaphylaxis, serum sickness, drug reactions, food allergies, insect venom allergies, mastocytosis,

25   allergic rhinitis, hypersensitivity pneumonitis, urticaria, angioedema, eczema, atopic dermatitis, allergic contact dermatitis, erythema multiforme, Stevens-Johnson syndrome, allergic conjunctivitis, atopic keratoconjunctivitis, venereal keratoconjunctivitis, giant papillary conjunctivitis and contact allergies), such as asthma (particularly allergic asthma) or other respiratory problems. Other conditions, in which immune suppression is

30   desired (including, for example, organ transplantation), may also be treatable using a protein (or antagonists thereof) of the present invention. The therapeutic effects of the

polypeptides or antagonists thereof on allergic reactions can be evaluated by in vivo animals models such as the cumulative contact enhancement test (Lastbom et al., Toxicology 125: 59-66, 1998), skin prick test (Hoffmann et al., Allergy 54: 446-54, 1999), guinea pig skin sensitization test (Vohr et al., Arch. Toxocol. 73: 501-9), and

5   murine local lymph node assay (Kimber et al., J. Toxicol. Environ. Health 53: 563-79).

Using the proteins of the invention it may also be possible to modulate immune responses, in a number of ways. Down regulation may be in the form of inhibiting or blocking an immune response already in progress or may involve preventing the induction of an immune response. The functions of activated T cells may be inhibited by

10   suppressing T cell responses or by inducing specific tolerance in T cells, or both. Immunosuppression of T cell responses is generally an active, non-antigen-specific, process which requires continuous exposure of the T cells to the suppressive agent. Tolerance, which involves inducing non-responsiveness or anergy in T cells, is distinguishable from immunosuppression in that it is generally antigen-specific and

15   persists after exposure to the tolerizing agent has ceased. Operationally, tolerance can be demonstrated by the lack of a T cell response upon reexposure to specific antigen in the absence of the tolerizing agent.

Down regulating or preventing one or more antigen functions (including without limitation B lymphocyte antigen functions (such as, for example, B7)), e.g., preventing

20   high level lymphokine synthesis by activated T cells, will be useful in situations of tissue, skin and organ transplantation and in graft-versus-host disease (GVHD). For example, blockage of T cell function should result in reduced tissue destruction in tissue transplantation. Typically, in tissue transplants, rejection of the transplant is initiated through its recognition as foreign by T cells, followed by an immune reaction that

25   destroys the transplant. The administration of a therapeutic composition of the invention may prevent cytokine synthesis by immune cells, such as T cells, and thus acts as an immunosuppressant. Moreover, a lack of costimulation may also be sufficient to anergize the T cells, thereby inducing tolerance in a subject. Induction of long-term tolerance by B lymphocyte antigen-blocking reagents may avoid the necessity of repeated administration

30   of these blocking reagents. To achieve sufficient immunosuppression or tolerance in a

subject, it may also be necessary to block the function of a combination of B lymphocyte antigens.

The efficacy of particular therapeutic compositions in preventing organ transplant rejection or GVHD can be assessed using animal models that are predictive of efficacy in
5   humans. Examples of appropriate systems which can be used include allogeneic cardiac grafts in rats and xenogeneic pancreatic islet cell grafts in mice, both of which have been used to examine the immunosuppressive effects of CTLA4Ig fusion proteins in vivo as described in Lenschow et al., Science 257:789-792 (1992) and Turka et al., Proc. Natl. Acad. Sci USA, 89:11102-11105 (1992). In addition, murine models of GVHD (see Paul
10   ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 846-847) can be used to determine the effect of therapeutic compositions of the invention on the development of that disease.

Blocking antigen function may also be therapeutically useful for treating autoimmune diseases. Many autoimmune disorders are the result of inappropriate
15   activation of T cells that are reactive against self tissue and which promote the production of cytokines and autoantibodies involved in the pathology of the diseases. Preventing the activation of autoreactive T cells may reduce or eliminate disease symptoms. Administration of reagents which block stimulation of T cells can be used to inhibit T cell activation and prevent production of autoantibodies or T cell-derived cytokines
20   which may be involved in the disease process. Additionally, blocking reagents may induce antigen-specific tolerance of autoreactive T cells which could lead to long-term relief from the disease. The efficacy of blocking reagents in preventing or alleviating autoimmune disorders can be determined using a number of well-characterized animal models of human autoimmune diseases. Examples include murine experimental
25   autoimmune encephalitis, systemic lupus erythmatosis in MRL/lpr/lpr mice or NZB hybrid mice, murine autoimmune collagen arthritis, diabetes mellitus in NOD mice and BB rats, and murine experimental myasthenia gravis (see Paul ed., Fundamental Immunology, Raven Press, New York, 1989, pp. 840-856).

Upregulation of an antigen function (e.g., a B lymphocyte antigen function), as a
30   means of up regulating immune responses, may also be useful in therapy. Upregulation of immune responses may be in the form of enhancing an existing immune response or

eliciting an initial immune response. For example, enhancing an immune response may be useful in cases of viral infection, including systemic viral diseases such as influenza, the common cold, and encephalitis.

Alternatively, anti-viral immune responses may be enhanced in an infected patient
5   by removing T cells from the patient, costimulating the T cells in vitro with viral antigen-pulsed APCs either expressing a peptide of the present invention or together with a stimulatory form of a soluble peptide of the present invention and reintroducing the in vitro activated T cells into the patient. Another method of enhancing anti-viral immune responses would be to isolate infected cells from a patient, transfect them with a nucleic
10   acid encoding a protein of the present invention as described herein such that the cells express all or a portion of the protein on their surface, and reintroduce the transfected cells into the patient. The infected cells would now be capable of delivering a costimulatory signal to, and thereby activate, T cells in vivo.

A polypeptide of the present invention may provide the necessary stimulation
15   signal to T cells to induce a T cell mediated immune response against the transfected tumor cells. In addition, tumor cells which lack MHC class I or MHC class II molecules, or which fail to reexpress sufficient mounts of MHC class I or MHC class II molecules, can be transfected with nucleic acid encoding all or a portion of (e.g., a cytoplasmic-domain truncated portion) of an MHC class I alpha chain protein and β_2
20   microglobulin protein or an MHC class II alpha chain protein and an MHC class II beta chain protein to thereby express MHC class I or MHC class II proteins on the cell surface. Expression of the appropriate class I or class II MHC in conjunction with a peptide having the activity of a B lymphocyte antigen (e.g., B7-1, B7-2, B7-3) induces a T cell mediated immune response against the transfected tumor cell. Optionally, a gene
25   encoding an antisense construct which blocks expression of an MHC class II associated protein, such as the invariant chain, can also be cotransfected with a DNA encoding a peptide having the activity of a B lymphocyte antigen to promote presentation of tumor associated antigens and induce tumor specific immunity. Thus, the induction of a T cell mediated immune response in a human subject may be sufficient to overcome
30   tumor-specific tolerance in the subject.

The activity of a protein of the invention may, among other means, be measured by the following methods:

Suitable assays for thymocyte or splenocyte cytotoxicity include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A.

5   M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Herrmann et al., Proc. Natl. Acad. Sci. USA 78:2488-2492, 1981; Herrmann et al., J. Immunol. 128:1968-1974, 1982; Handa et al., J. Immunol. 135:1564-1572, 1985; Takai et al., I. Immunol.

10   137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bowman et al., J. Virology 61:1992-1998; Bertagnolli et al., Cellular Immunology 133:327-341, 1991; Brown et al., J. Immunol. 153:3079-3092, 1994.

Assays for T-cell-dependent immunoglobulin responses and isotype switching (which will identify, among others, proteins that modulate T-cell dependent antibody

15   responses and that affect Th1/Th2 profiles) include, without limitation, those described in: Maliszewski, J. Immunol. 144:3028-3033, 1990; and Assays for B cell function: In vitro antibody production, Mond, J. J. and Brunswick, M. In Current Protocols in Immunology. J. E. e.a. Coligan eds. Vol 1 pp. 3.8.1-3.8.16, John Wiley and Sons, Toronto. 1994.

20   Mixed lymphocyte reaction (MLR) assays (which will identify, among others, proteins that generate predominantly Th1 and CTL responses) include, without limitation, those described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 3, In Vitro assays for Mouse Lymphocyte

25   Function 3.1-3.19; Chapter 7, Immunologic studies in Humans); Takai et al., J. Immunol. 137:3494-3500, 1986; Takai et al., J. Immunol. 140:508-512, 1988; Bertagnolli et al., J. Immunol. 149:3778-3783, 1992.

Dendritic cell-dependent assays (which will identify, among others, proteins expressed by dendritic cells that activate naive T-cells) include, without limitation, those

30   described in: Guery et al., J. Immunol. 134:536-544, 1995; Inaba et al., Journal of Experimental Medicine 173:549-559, 1991; Macatonia et al., Journal of Immunology

154:5071-5079, 1995; Porgador et al., Journal of Experimental Medicine 182:255-260, 1995; Nair et al., Journal of Virology 67:4062-4069, 1993; Huang et al., Science 264:961-965, 1994; Macatonia et al., Journal of Experimental Medicine 169:1255-1264, 1989; Bhardwaj et al., Journal of Clinical Investigation 94:797-807, 1994; and Inaba et

5   al., Journal of Experimental Medicine 172:631-640, 1990.

Assays for lymphocyte survival/apoptosis (which will identify, among others, proteins that prevent apoptosis after superantigen induction and proteins that regulate lymphocyte homeostasis) include, without limitation, those described in: Darzynkiewicz et al., Cytometry 13:795-808, 1992; Gorczyca et al., Leukemia 7:659-670, 1993;

10   Gorczyca et al., Cancer Research 53:1945-1951, 1993; Itoh et al., Cell 66:233-243, 1991; Zacharchuk, Journal of Immunology 145:4037-4045, 1990; Zamai et al., Cytometry 14:891-897, 1993; Gorczyca et al., International Journal of Oncology 1:639-648, 1992.

Assays for proteins that influence early steps of T-cell commitment and development include, without limitation, those described in: Antica et al., Blood

15   84:111-117, 1994; Fine et al., Cellular Immunology 155:111-122, 1994; Galy et al., Blood 85:2770-2778, 1995; Toki et al., Proc. Nat. Acad Sci. USA 88:7548-7551, 1991.

4.10.8 ACTIVIN/INHIBIN ACTIVITY

A polypeptide of the present invention may also exhibit activin- or inhibin-related

20   activities. A polynucleotide of the invention may encode a polypeptide exhibiting such characteristics. Inhibins are characterized by their ability to inhibit the release of follicle stimulating hormone (FSH), while activins and are characterized by their ability to stimulate the release of follicle stimulating hormone (FSH). Thus, a polypeptide of the present invention, alone or in heterodimers with a member of the inhibin family, may be

25   useful as a contraceptive based on the ability of inhibins to decrease fertility in female mammals and decrease spermatogenesis in male mammals. Administration of sufficient amounts of other inhibins can induce infertility in these mammals. Alternatively, the polypeptide of the invention, as a homodimer or as a heterodimer with other protein subunits of the inhibin group, may be useful as a fertility inducing therapeutic, based

30   upon the ability of activin molecules in stimulating FSH release from cells of the anterior pituitary. See, for example, U.S. Pat. No. 4,798,885. A polypeptide of the invention may

also be useful for advancement of the onset of fertility in sexually immature mammals, so as to increase the lifetime reproductive performance of domestic animals such as, but not limited to, cows, sheep and pigs.

The activity of a polypeptide of the invention may, among other means, be measured by the following methods.

Assays for activin/inhibin activity include, without limitation, those described in: Vale et al., Endocrinology 91:562-572, 1972; Ling et al., Nature 321:779-782, 1986; Vale et al., Nature 321:776-779, 1986; Mason et al., Nature 318:659-663, 1985; Forage et al., Proc. Natl. Acad. Sci. USA 83:3091-3095, 1986.

4.10.9 CHEMOTACTIC/CHEMOKINETIC ACTIVITY

A polypeptide of the present invention may be involved in chemotactic or chemokinetic activity for mammalian cells, including, for example, monocytes, fibroblasts, neutrophils, T-cells, mast cells, eosinophils, epithelial and/or endothelial cells. A polynucleotide of the invention can encode a polypeptide exhibiting such attributes. Chemotactic and chemokinetic receptor activation can be used to mobilize or attract a desired cell population to a desired site of action. Chemotactic or chemokinetic compositions (e.g. proteins, antibodies, binding partners, or modulators of the invention) provide particular advantages in treatment of wounds and other trauma to tissues, as well as in treatment of localized infections. For example, attraction of lymphocytes, monocytes or neutrophils to tumors or sites of infection may result in improved immune responses against the tumor or infecting agent.

A protein or peptide has chemotactic activity for a particular cell population if it can stimulate, directly or indirectly, the directed orientation or movement of such cell population. Preferably, the protein or peptide has the ability to directly stimulate directed movement of cells. Whether a particular protein has chemotactic activity for a population of cells can be readily determined by employing such protein or peptide in any known assay for cell chemotaxis.

Therapeutic compositions of the invention can be used in the following:

Assays for chemotactic activity (which will identify proteins that induce or prevent chemotaxis) consist of assays that measure the ability of a protein to induce the

migration of cells across a membrane as well as the ability of a protein to induce the

adhesion of one cell population to another cell population. Suitable assays for movement

and adhesion include, without limitation, those described in: Current Protocols in

Immunology, Ed by J. E. Coligan, A. M. Kruisbeek, D. H. Marguiles, E. M. Shevach, W.

5   Strober, Pub. Greene Publishing Associates and Wiley-Interscience (Chapter 6.12,

Measurement of alpha and beta Chemokines 6.12.1-6.12.28; Taub et al. J. Clin. Invest.

95:1370-1376, 1995; Lind et al. APMIS 103:140-146, 1995; Muller et al Eur. J.

Immunol. 25:1744-1748; Gruber et al. J. of Immunol. 152:5860-5867, 1994; Johnston et

al. J. of Immunol. 153:1762-1768, 1994.

10

4.10.10   HEMOSTATIC AND THROMBOLYTIC ACTIVITY

A polypeptide of the invention may also be involved in hemostatis or

thrombolysis or thrombosis. A polynucleotide of the invention can encode a polypeptide

exhibiting such attributes. Compositions may be useful in treatment of various

15   coagulation disorders (including hereditary disorders, such as hemophilias) or to enhance

coagulation and other hemostatic events in treating wounds resulting from trauma,

surgery or other causes. A composition of the invention may also be useful for dissolving

or inhibiting formation of thromboses and for treatment and prevention of conditions

resulting therefrom (such as, for example, infarction of cardiac and central nervous

20   system vessels (e.g., stroke).

Therapeutic compositions of the invention can be used in the following:

Assay for hemostatic and thrombolytic activity include, without limitation, those

described in: Linet et al., J. Clin. Pharmacol. 26:131-140, 1986; Burdick et al.,

Thrombosis Res. 45:413-419, 1987; Humphrey et al., Fibrinolysis 5:71-79 (1991);

25   Schaub, Prostaglandins 35:467-474, 1988.

4.10.11   CANCER DIAGNOSIS AND THERAPY

Polypeptides of the invention may be involved in cancer cell generation,

proliferation or metastasis. Detection of the presence or amount of polynucleotides or

30   polypeptides of the invention may be useful for the diagnosis and/or prognosis of one or

more types of cancer. For example, the presence or increased expression of a

polynucleotide/polypeptide of the invention may indicate a hereditary risk of cancer, a precancerous condition, or an ongoing malignancy. Conversely, a defect in the gene or absence of the polypeptide may be associated with a cancer condition. Identification of single nucleotide polymorphisms associated with cancer or a predisposition to cancer

5   may also be useful for diagnosis or prognosis.

Cancer treatments promote tumor regression by inhibiting tumor cell proliferation, inhibiting angiogenesis (growth of new blood vessels that is necessary to support tumor growth) and/or prohibiting metastasis by reducing tumor cell motility or invasiveness. Therapeutic compositions of the invention may be effective in adult and

10   pediatric oncology including in solid phase tumors/malignancies, locally advanced tumors, human soft tissue sarcomas, metastatic cancer, including lymphatic metastases, blood cell malignancies including multiple myeloma, acute and chronic leukemias, and lymphomas, head and neck cancers including mouth cancer, larynx cancer and thyroid cancer, lung cancers including small cell carcinoma and non-small cell cancers, breast

15   cancers including small cell carcinoma and ductal carcinoma, gastrointestinal cancers including esophageal cancer, stomach cancer, colon cancer, colorectal cancer and polyps associated with colorectal neoplasia, pancreatic cancers, liver cancer, urologic cancers including bladder cancer and prostate cancer, malignancies of the female genital tract including ovarian carcinoma, uterine (including endometrial) cancers, and solid tumor in

20   the ovarian follicle, kidney cancers including renal cell carcinoma, brain cancers including intrinsic brain tumors, neuroblastoma, astrocytic brain tumors, gliomas, metastatic tumor cell invasion in the central nervous system, bone cancers including osteomas, skin cancers including malignant melanoma, tumor progression of human skin keratinocytes, squamous cell carcinoma, basal cell carcinoma, hemangiopericytoma and

25   Karposi's sarcoma.

Polypeptides, polynucleotides, or modulators of polypeptides of the invention (including inhibitors and stimulators of the biological activity of the polypeptide of the invention) may be administered to treat cancer. Therapeutic compositions can be administered in therapeutically effective dosages alone or in combination with adjuvant

30 .   cancer therapy such as surgery, chemotherapy, radiotherapy, thermotherapy, and laser therapy, and may provide a beneficial effect, e.g. reducing tumor size, slowing rate of

tumor growth, inhibiting metastasis, or otherwise improving overall clinical condition, without necessarily eradicating the cancer.

The composition can also be administered in therapeutically effective amounts as a portion of an anti-cancer cocktail. An anti-cancer cocktail is a mixture of the

5 polypeptide or modulator of the invention with one or more anti-cancer drugs in addition to a pharmaceutically acceptable carrier for delivery. The use of anti-cancer cocktails as a cancer treatment is routine. Anti-cancer drugs that are well known in the art and can be used as a treatment in combination with the polypeptide or modulator of the invention include: Actinomycin D, Aminoglutethimide, Asparaginase, Bleomycin, Busulfan,

10 Carboplatin, Carmustine, Chlorambucil, Cisplatin (cis-DDP), Cyclophosphamide, Cytarabine HCl (Cytosine arabinoside), Dacarbazine, Dactinomycin, Daunorubicin HCl, Doxorubicin HCl, Estramustine phosphate sodium, Etoposide (V16-213), Floxuridine, 5-Fluorouracil (5-Fu), Flutamide, Hydroxyurea (hydroxycarbamide), Ifosfamide, Interferon Alpha-2a, Interferon Alpha-2b, Leuprolide acetate (LHRH-releasing factor analog),

15 Lomustine, Mechlorethamine HCl (nitrogen mustard), Melphalan, Mercaptopurine, Mesna, Methotrexate (MTX), Mitomycin, Mitoxantrone HCl, Octreotide, Plicamycin, Procarbazine HCl, Streptozocin, Tamoxifen citrate, Thioguanine, Thiotepa, Vinblastine sulfate, Vincristine sulfate, Amsacrine, Azacitidine, Hexamethylmelamine, Interleukin-2, Mitoguazone, Pentostatin, Semustine, Teniposide, and Vindesine sulfate.

20 In addition, therapeutic compositions of the invention may be used for prophylactic treatment of cancer. There are hereditary conditions and/or environmental situations (e.g. exposure to carcinogens) known in the art that predispose an individual to developing cancers. Under these circumstances, it may be beneficial to treat these individuals with therapeutically effective doses of the polypeptide of the invention to

25 reduce the risk of developing cancers.

In vitro models can be used to determine the effective doses of the polypeptide of the invention as a potential cancer treatment. These *in vitro* models include proliferation assays of cultured tumor cells, growth of cultured tumor cells in soft agar (see Freshney, (1987) Culture of Animal Cells: A Manual of Basic Technique, Wily-Liss, New York,

30 NY Ch 18 and Ch 21), tumor systems in nude mice as described in Giovanella et al., J. Natl. Can. Inst., 52: 921-30 (1974), mobility and invasive potential of tumor cells in

Boyden Chamber assays as described in Pilkington et al., Anticancer Res., 17: 4107-9

(1997), and angiogenesis assays such as induction of vascularization of the chick

chorioallantoic membrane or induction of vascular endothelial cell migration as described

in Ribatta et al., Intl. J. Dev. Biol., 40: 1189-97 (1999) and Li et al., Clin. Exp.

5   Metastasis, 17:423-9 (1999), respectively. Suitable tumor cells lines are available, e.g.

from American Type Tissue Culture Collection catalogs.

4.10.12   RECEPTOR/LIGAND ACTIVITY

A polypeptide of the present invention may also demonstrate activity as receptor,

10   receptor ligand or inhibitor or agonist of receptor/ligand interactions. A polynucleotide

of the invention can encode a polypeptide exhibiting such characteristics. Examples of

such receptors and ligands include, without limitation, cytokine receptors and their

ligands, receptor kinases and their ligands, receptor phosphatases and their ligands,

receptors involved in cell-cell interactions and their ligands (including without limitation,

15   cellular adhesion molecules (such as selectins, integrins and their ligands) and

receptor/ligand pairs involved in antigen presentation, antigen recognition and

development of cellular and humoral immune responses. Receptors and ligands are also

useful for screening of potential peptide or small molecule inhibitors of the relevant

receptor/ligand interaction. A protein of the present invention (including, without

20   limitation, fragments of receptors and ligands) may themselves be useful as inhibitors of

receptor/ligand interactions.

The activity of a polypeptide of the invention may, among other means, be

measured by the following methods:

Suitable assays for receptor-ligand activity include without limitation those

25   described in: Current Protocols in Immunology, Ed by J. E. Coligan, A. M. Kruisbeek,

D. H. Margulies, E. M. Shevach, W. Strober, Pub. Greene Publishing Associates and

Wiley- Interscience (Chapter 7.28, Measurement of Cellular Adhesion under static

conditions 7.28.1- 7.28.22), Takai et al., Proc. Natl. Acad. Sci. USA 84:6864-6868, 1987;

Bierer et al., J. Exp. Med. 168:1145-1156, 1988; Rosenstein et al., J. Exp. Med.

30   169:149-160 1989; Stoltenborg et al., J. Immunol. Methods 175:59-68, 1994; Stitt et al.,

Cell 80:661-670, 1995.

By way of example, the polypeptides of the invention may be used as a receptor for a ligand(s) thereby transmitting the biological activity of that ligand(s). Ligands may be identified through binding assays, affinity chromatography, dihybrid screening assays, BIAcore assays, gel overlay assays, or other methods known in the art.

5.   Studies characterizing drugs or proteins as agonist or antagonist or partial agonists or a partial antagonist require the use of other proteins as competing ligands. The polypeptides of the present invention or ligand(s) thereof may be labeled by being coupled to radioisotopes, colorimetric molecules or a toxin molecules by conventional methods. ("Guide to Protein Purification" Murray P. Deutscher (ed) Methods in

10   Enzymology Vol. 182 (1990) Academic Press, Inc. San Diego). Examples of radioisotopes include, but are not limited to, tritium and carbon-14 . Examples of colorimetric molecules include, but are not limited to, fluorescent molecules such as fluorescamine, or rhodamine or other colorimetric molecules. Examples of toxins include, but are not limited, to ricin.

15

4.10.13   DRUG SCREENING

This invention is particularly useful for screening chemical compounds by using the novel polypeptides or binding fragments thereof in any of a variety of drug screening techniques. The polypeptides or fragments employed in such a test may either be free in

20   solution, affixed to a solid support, borne on a cell surface or located intracellularly. One method of drug screening utilizes eukaryotic or prokaryotic host cells which are stably transformed with recombinant nucleic acids expressing the polypeptide or a fragment thereof. Drugs are screened against such transformed cells in competitive binding assays. Such cells, either in viable or fixed form, can be used for standard binding assays. One

25   may measure, for example, the formation of complexes between polypeptides of the invention or fragments and the agent being tested or examine the diminution in complex formation between the novel polypeptides and an appropriate cell line, which are well known in the art.

Sources for test compounds that may be screened for ability to bind to or

30   modulate (i.e., increase or decrease) the activity of polypeptides of the invention include (1) inorganic and organic chemical libraries, (2) natural product libraries, and (3)

combinatorial libraries comprised of either random or mimetic peptides, oligonucleotides or organic molecules.

Chemical libraries may be readily synthesized or purchased from a number of commercial sources, and may include structural analogs of known compounds or
5   compounds that are identified as "hits" or "leads" via natural product screening.

The sources of natural product libraries are microorganisms (including bacteria and fungi), animals, plants or other vegetation, or marine organisms, and libraries of mixtures for screening may be created by: (1) fermentation and extraction of broths from soil, plant or marine microorganisms or (2) extraction of the organisms themselves.
10   Natural product libraries include polyketides, non-ribosomal peptides, and (non-naturally occurring) variants thereof. For a review, see *Science 282*:63-68 (1998).

Combinatorial libraries are composed of large numbers of peptides, oligonucleotides or organic compounds and can be readily prepared by traditional automated synthesis methods, PCR, cloning or proprietary synthetic methods. Of
15   particular interest are peptide and oligonucleotide combinatorial libraries. Still other libraries of interest include peptide, protein, peptidomimetic, multiparallel synthetic collection, recombinatorial, and polypeptide libraries. For a review of combinatorial chemistry and libraries created therefrom, see Myers, *Curr. Opin. Biotechnol.* 8:701-707 (1997). For reviews and examples of peptidomimetic libraries, see Al-Obeidi et al., *Mol.*
20   *Biotechnol,* 9(3):205-23 (1998); Hruby et al., *Curr Opin Chem Biol,* 1(1):114-19 (1997); Dorner et al., *Bioorg Med Chem*, 4(5):709-15 (1996) (alkylated dipeptides).

Identification of modulators through use of the various libraries described herein permits modification of the candidate "hit" (or "lead") to optimize the capacity of the "hit" to bind a polypeptide of the invention. The molecules identified in the binding assay
25   are then tested for antagonist or agonist activity in *in vivo* tissue culture or animal models that are well known in the art. In brief, the molecules are titrated into a plurality of cell cultures or animals and then tested for either cell/animal death or prolonged survival of the animal/cells.

The binding molecules thus identified may be complexed with toxins, e.g., ricin
30   or cholera, or with other compounds that are toxic to cells such as radioisotopes. The toxin-binding molecule complex is then targeted to a tumor or other cell by the specificity

of the binding molecule for a polypeptide of the invention. Alternatively, the binding molecules may be complexed with imaging agents for targeting and imaging purposes.

4.10.14   ASSAY FOR RECEPTOR ACTIVITY

5   The invention also provides methods to detect specific binding of a polypeptide e.g. a ligand or a receptor. The art provides numerous assays particularly useful for identifying previously unknown binding partners for receptor polypeptides of the invention. For example, expression cloning using mammalian or bacterial cells, or dihybrid screening assays can be used to identify polynucleotides encoding binding

10   partners. As another example, affinity chromatography with the appropriate immobilized polypeptide of the invention can be used to isolate polypeptides that recognize and bind polypeptides of the invention. There are a number of different libraries used for the identification of compounds, and in particular small molecules, that modulate (*i.e.*, increase or decrease) biological activity of a polypeptide of the invention. Ligands for

15   receptor polypeptides of the invention can also be identified by adding exogenous ligands, or cocktails of ligands to two cells populations that are genetically identical except for the expression of the receptor of the invention: one cell population expresses the receptor of the invention whereas the other does not. The response of the two cell populations to the addition of ligands(s) are then compared. Alternatively, an expression

20   library can be co-expressed with the polypeptide of the invention in cells and assayed for an autocrine response to identify potential ligand(s). As still another example, BIAcore assays, gel overlay assays, or other methods known in the art can be used to identify binding partner polypeptides, including, (1) organic and inorganic chemical libraries, (2) natural product libraries, and (3) combinatorial libraries comprised of random peptides,

25   oligonucleotides or organic molecules.

The role of downstream intracellular signaling molecules in the signaling cascade of the polypeptide of the invention can be determined. For example, a chimeric protein in which the cytoplasmic domain of the polypeptide of the invention is fused to the extracellular portion of a protein, whose ligand has been identified, is produced in a host

30   cell. The cell is then incubated with the ligand specific for the extracellular portion of the chimeric protein, thereby activating the chimeric receptor. Known downstream proteins

involved in intracellular signaling can then be assayed for expected modifications i.e. phosphorylation. Other methods known to those in the art can also be used to identify signaling molecules involved in receptor activity.

5   **4.10.15   ANTI-INFLAMMATORY ACTIVITY**

Compositions of the present invention may also exhibit anti-inflammatory activity. The anti-inflammatory activity may be achieved by providing a stimulus to cells involved in the inflammatory response, by inhibiting or promoting cell-cell interactions (such as, for example, cell adhesion), by inhibiting or promoting chemotaxis of cells involved in the inflammatory process, inhibiting or promoting cell extravasation, or by stimulating or suppressing production of other factors which more directly inhibit or promote an inflammatory response. Compositions with such activities can be used to treat inflammatory conditions including chronic or acute conditions), including without limitation intimation associated with infection (such as septic shock, sepsis or systemic inflammatory response syndrome (SIRS)), ischemia-reperfusion injury, endotoxin lethality, arthritis, complement-mediated hyperacute rejection, nephritis, cytokine or chemokine-induced lung injury, inflammatory bowel disease, Crohn's disease or resulting from over production of cytokines such as TNF or IL-1. Compositions of the invention may also be useful to treat anaphylaxis and hypersensitivity to an antigenic substance or material. Compositions of this invention may be utilized to prevent or treat conditions such as, but not limited to, sepsis, acute pancreatitis, endotoxin shock, cytokine induced shock, rheumatoid arthritis, chronic inflammatory arthritis, pancreatic cell damage from diabetes mellitus type 1, graft versus host disease, inflammatory bowel disease, inflamation associated with pulmonary disease, other autoimmune disease or inflammatory disease, an antiproliferative agent such as for acute or chronic mylegenous leukemia or in the prevention of premature labor secondary to intrauterine infections.

4.10.16   LEUKEMIAS

Leukemias and related disorders may be treated or prevented by administration of a therapeutic that promotes or inhibits function of the polynucleotides and/or polypeptides of the invention. Such leukemias and related disorders include but are not

limited to acute leukemia, acute lymphocytic leukemia, acute myelocytic leukemia, myeloblastic, promyelocytic, myelomonocytic, monocytic, erythroleukemia, chronic leukemia, chronic myelocytic (granulocytic) leukemia and chronic lymphocytic leukemia (for a review of such disorders, see Fishman et al., 1985, Medicine, 2d Ed., J.B.

5   Lippincott Co., Philadelphia).

4.10.17   NERVOUS SYSTEM DISORDERS

Nervous system disorders, involving cell types which can be tested for efficacy of intervention with compounds that modulate the activity of the polynucleotides and/or

10   polypeptides of the invention, and which can be treated upon thus observing an indication of therapeutic utility, include but are not limited to nervous system injuries, and diseases or disorders which result in either a disconnection of axons, a diminution or degeneration of neurons, or demyelination. Nervous system lesions which may be treated in a patient (including human and non-human mammalian patients) according to the invention

15   include but are not limited to the following lesions of either the central (including spinal cord, brain) or peripheral nervous systems:

(i)   traumatic lesions, including lesions caused by physical injury or associated with surgery, for example, lesions which sever a portion of the nervous system, or compression injuries;

20   (ii)   ischemic lesions, in which a lack of oxygen in a portion of the nervous system results in neuronal injury or death, including cerebral infarction or ischemia, or spinal cord infarction or ischemia;

(iii)   infectious lesions, in which a portion of the nervous system is destroyed or injured as a result of infection, for example, by an abscess or associated with infection by

25   human immunodeficiency virus, herpes zoster, or herpes simplex virus or with Lyme disease, tuberculosis, syphilis;

(iv)   degenerative lesions, in which a portion of the nervous system is destroyed or injured as a result of a degenerative process including but not limited to degeneration associated with Parkinson's disease, Alzheimer's disease, Huntington's chorea, or

30   amyotrophic lateral sclerosis;

(v)   lesions associated with nutritional diseases or disorders, in which a portion of the nervous system is destroyed or injured by a nutritional disorder or disorder of metabolism including but not limited to, vitamin B12 deficiency, folic acid deficiency, Wernicke disease, tobacco-alcohol amblyopia, Marchiafava-Bignami disease (primary
5   degeneration of the corpus callosum), and alcoholic cerebellar degeneration;

(vi)   neurological lesions associated with systemic diseases including but not limited to diabetes (diabetic neuropathy, Bell's palsy), systemic lupus erythematosus, carcinoma, or sarcoidosis;

(vii)   lesions caused by toxic substances including alcohol, lead, or particular
10   neurotoxins; and

(viii)   demyelinated lesions in which a portion of the nervous system is destroyed or injured by a demyelinating disease including but not limited to multiple sclerosis, human immunodeficiency virus-associated myelopathy, transverse myelopathy or various etiologies, progressive multifocal leukoencephalopathy, and central pontine
15   myelinolysis.

Therapeutics which are useful according to the invention for treatment of a nervous system disorder may be selected by testing for biological activity in promoting the survival or differentiation of neurons. For example, and not by way of limitation, therapeutics which elicit any of the following effects may be useful according to the
20   invention:

(i)   increased survival time of neurons in culture;

(ii)   increased sprouting of neurons in culture or in vivo;

(iii)   increased production of a neuron-associated molecule in culture or *in vivo*, *e.g.*, choline acetyltransferase or acetylcholinesterase with respect to motor neurons; or

25   (iv)   decreased symptoms of neuron dysfunction in vivo.

Such effects may be measured by any method known in the art. In preferred, non-limiting embodiments, increased survival of neurons may be measured by the method set forth in Arakawa et al. (1990, J. Neurosci. 10:3507-3515); increased sprouting of neurons may be detected by methods set forth in Pestronk et al. (1980, Exp. Neurol.
30   70:65-82) or Brown et al. (1981, Ann. Rev. Neurosci. 4:17-42); increased production of neuron-associated molecules may be measured by bioassay, enzymatic assay, antibody

binding, Northern blot assay, *etc.*, depending on the molecule to be measured; and motor neuron dysfunction may be measured by assessing the physical manifestation of motor neuron disorder, *e.g.*, weakness, motor neuron conduction velocity, or functional disability.

5   In specific embodiments, motor neuron disorders that may be treated according to the invention include but are not limited to disorders such as infarction, infection, exposure to toxin, trauma, surgical damage, degenerative disease or malignancy that may affect motor neurons as well as other components of the nervous system, as well as disorders that selectively affect neurons such as amyotrophic lateral sclerosis, and

10   including but not limited to progressive spinal muscular atrophy, progressive bulbar palsy, primary lateral sclerosis, infantile and juvenile muscular atrophy, progressive bulbar paralysis of childhood (Fazio-Londe syndrome), poliomyelitis and the post polio syndrome, and Hereditary Motorsensory Neuropathy (Charcot-Marie-Tooth Disease).

15   **4.10.18   OTHER ACTIVITIES**

A polypeptide of the invention may also exhibit one or more of the following additional activities or effects: inhibiting the growth, infection or function of, or killing, infectious agents, including, without limitation, bacteria, viruses, fungi and other parasites; effecting (suppressing or enhancing) bodily characteristics, including, without

20   limitation, height, weight, hair color, eye color, skin, fat to lean ratio or other tissue pigmentation, or organ or body part size or shape (such as, for example, breast augmentation or diminution, change in bone form or shape); effecting biorhythms or circadian cycles or rhythms; effecting the fertility of male or female subjects; effecting the metabolism, catabolism, anabolism, processing, utilization, storage or elimination of

25   dietary fat, lipid, protein, carbohydrate, vitamins, minerals, co-factors or other nutritional factors or component(s); effecting behavioral characteristics, including, without limitation, appetite, libido, stress, cognition (including cognitive disorders), depression (including depressive disorders) and violent behaviors; providing analgesic effects or other pain reducing effects; promoting differentiation and growth of embryonic stem cells

30   in lineages other than hematopoietic lineages; hormonal or endocrine activity; in the case of enzymes, correcting deficiencies of the enzyme and treating deficiency-related

diseases; treatment of hyperproliferative disorders (such as, for example, psoriasis); immunoglobulin-like activity (such as, for example, the ability to bind antigens or complement); and the ability to act as an antigen in a vaccine composition to raise an immune response against such protein or another material or entity which is

5   cross-reactive with such protein.

4.10.19   IDENTIFICATION OF POLYMORPHISMS

The demonstration of polymorphisms makes possible the identification of such polymorphisms in human subjects and the pharmacogenetic use of this information for

10   diagnosis and treatment. Such polymorphisms may be associated with, e.g., differential predisposition or susceptibility to various disease states (such as disorders involving inflammation or immune response) or a differential response to drug administration, and this genetic information can be used to tailor preventive or therapeutic treatment appropriately. For example, the existence of a polymorphism associated with a

15   predisposition to inflammation or autoimmune disease makes possible the diagnosis of this condition in humans by identifying the presence of the polymorphism.

Polymorphisms can be identified in a variety of ways known in the art which all generally involve obtaining a sample from a patient, analyzing DNA from the sample, optionally involving isolation or amplification of the DNA, and identifying the presence

20   of the polymorphism in the DNA. For example, PCR may be used to amplify an appropriate fragment of genomic DNA which may then be sequenced. Alternatively, the DNA may be subjected to allele-specific oligonucleotide hybridization (in which appropriate oligonucleotides are hybridized to the DNA under conditions permitting detection of a single base mismatch) or to a single nucleotide extension assay (in which

25   an oligonucleotide that hybridizes immediately adjacent to the position of the polymorphism is extended with one or more labeled nucleotides). In addition, traditional restriction fragment length polymorphism analysis (using restriction enzymes that provide differential digestion of the genomic DNA depending on the presence or absence of the polymorphism) may be performed. Arrays with nucleotide sequences of the

30   present invention can be used to detect polymorphisms. The array can comprise modified nucleotide sequences of the present invention in order to detect the nucleotide sequences

of the present invention. In the alternative, any one of the nucleotide sequences of the present invention can be placed on the array to detect changes from those sequences.

Alternatively a polymorphism resulting in a change in the amino acid sequence could also be detected by detecting a corresponding change in amino acid sequence of the

5   protein, e.g., by an antibody specific to the variant sequence.

4.10.20   ARTHRITIS AND INFLAMMATION

The immunosuppressive effects of the compositions of the invention against rheumatoid arthritis is determined in an experimental animal model system. The

10   experimental model system is adjuvant induced arthritis in rats, and the protocol is described by J. Holoshitz, et at., 1983, Science, 219:56, or by B. Waksman et al., 1963, Int. Arch. Allergy Appl. Immunol., 23:129. Induction of the disease can be caused by a single injection, generally intradermally, of a suspension of killed Mycobacterium tuberculosis in complete Freund's adjuvant (CFA). The route of injection can vary, but

15   rats may be injected at the base of the tail with an adjuvant mixture. The polypeptide is administered in phosphate buffered solution (PBS) at a dose of about 1-5 mg/kg. The control consists of administering PBS only.

The procedure for testing the effects of the test compound would consist of intradermally injecting killed Mycobacterium tuberculosis in CFA followed by

20   immediately administering the test compound and subsequent treatment every other day until day 24. At 14, 15, 18, 20, 22, and 24 days after injection of Mycobacterium CFA, an overall arthritis score may be obtained as described by J. Holoskitz above. An analysis of the data would reveal that the test compound would have a dramatic affect on the swelling of the joints as measured by a decrease of the arthritis score.

25

4.11 THERAPEUTIC METHODS

The compositions (including polypeptide fragments, analogs, variants and antibodies or other binding partners or modulators including antisense polynucleotides) of the invention have numerous applications in a variety of therapeutic methods.

30   Examples of therapeutic applications include, but are not limited to, those exemplified herein.

4.11.1 EXAMPLE

One embodiment of the invention is the administration of an effective amount of the polypeptides or other composition of the invention to individuals affected by a

5   disease or disorder that can be modulated by regulating the peptides of the invention. While the mode of administration is not particularly important, parenteral administration is preferred. An exemplary mode of administration is to deliver an intravenous bolus. The dosage of the polypeptides or other composition of the invention will normally be determined by the prescribing physician. It is to be expected that the dosage will vary

10   according to the age, weight, condition and response of the individual patient. Typically, the amount of polypeptide administered per dose will be in the range of about 0.01µg/kg to 100 mg/kg of body weight, with the preferred dose being about 0.1µg/kg to 10 mg/kg of patient body weight. For parenteral administration, polypeptides of the invention will be formulated in an injectable form combined with a pharmaceutically acceptable

15   parenteral vehicle. Such vehicles are well known in the art and examples include water, saline, Ringer's solution, dextrose solution, and solutions consisting of small amounts of the human serum albumin. The vehicle may contain minor amounts of additives that maintain the isotonicity and stability of the polypeptide or other active ingredient. The preparation of such solutions is within the skill of the art.

20

4.12   PHARMACEUTICAL FORMULATIONS AND ROUTES OF ADMINISTRATION

A protein or other composition of the present invention (from whatever source derived, including without limitation from recombinant and non-recombinant sources and

25   including antibodies and other binding partners of the polypeptides of the invention) may be administered to a patient in need, by itself, or in pharmaceutical compositions where it is mixed with suitable carriers or excipient(s) at doses to treat or ameliorate a variety of disorders. Such a composition may optionally contain (in addition to protein or other active ingredient and a carrier) diluents, fillers, salts, buffers, stabilizers, solubilizers, and

30   other materials well known in the art. The term "pharmaceutically acceptable" means a non-toxic material that does not interfere with the effectiveness of the biological activity

of the active ingredient(s). The characteristics of the carrier will depend on the route of administration. The pharmaceutical composition of the invention may also contain cytokines, lymphokines, or other hematopoietic factors such as M-CSF, GM-CSF, TNF, IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14,

5   IL-15, IFN, TNF0, TNF1, TNF2, G-CSF, Meg-CSF, thrombopoietin, stem cell factor, and erythropoietin. In further compositions, proteins of the invention may be combined with other agents beneficial to the treatment of the disease or disorder in question. These agents include various growth factors such as epidermal growth factor (EGF), platelet-derived growth factor (PDGF), transforming growth factors (TGF-α and TGF-β),

10   insulin-like growth factor (IGF), as well as cytokines described herein.

The pharmaceutical composition may further contain other agents which either enhance the activity of the protein or other active ingredient or complement its activity or use in treatment. Such additional factors and/or agents may be included in the pharmaceutical composition to produce a synergistic effect with protein or other active

15   ingredient of the invention, or to minimize side effects. Conversely, protein or other active ingredient of the present invention may be included in formulations of the particular clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or anti-thrombotic factor, or anti- inflammatory agent to minimize side effects of the clotting factor, cytokine, lymphokine, other hematopoietic factor, thrombolytic or

20   anti-thrombotic factor, or anti-inflammatory agent (such as IL-1Ra, IL-1 Hy1, IL-1 Hy2, anti-TNF, corticosteroids, immunosuppressive agents). A protein of the present invention may be active in multimers (e.g., heterodimers or homodimers) or complexes with itself or other proteins. As a result, pharmaceutical compositions of the invention may comprise a protein of the invention in such multimeric or complexed form.

25   As an alternative to being included in a pharmaceutical composition of the invention including a first protein, a second protein or a therapeutic agent may be concurrently administered with the first protein (e.g., at the same time, or at differing times provided that therapeutic concentrations of the combination of agents is achieved at the treatment site). Techniques for formulation and administration of the compounds of

30   the instant application may be found in "Remington's Pharmaceutical Sciences," Mack Publishing Co., Easton, PA, latest edition. A therapeutically effective dose further refers

to that amount of the compound sufficient to result in amelioration of symptoms, *e.g.*, treatment, healing, prevention or amelioration of the relevant medical condition, or an increase in rate of treatment, healing, prevention or amelioration of such conditions. When applied to an individual active ingredient, administered alone, a therapeutically

5   effective dose refers to that ingredient alone. When applied to a combination, a therapeutically effective dose refers to combined amounts of the active ingredients that result in the therapeutic effect, whether administered in combination, serially or simultaneously.

In practicing the method of treatment or use of the present invention, a

10   therapeutically effective amount of protein or other active ingredient of the present invention is administered to a mammal having a condition to be treated. Protein or other active ingredient of the present invention may be administered in accordance with the method of the invention either alone or in combination with other therapies such as treatments employing cytokines, lymphokines or other hematopoietic factors. When co-

15   administered with one or more cytokines, lymphokines or other hematopoietic factors, protein or other active ingredient of the present invention may be administered either simultaneously with the cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors, or sequentially. If administered sequentially, the attending physician will decide on the appropriate sequence of administering protein or

20   other active ingredient of the present invention in combination with cytokine(s), lymphokine(s), other hematopoietic factor(s), thrombolytic or anti-thrombotic factors.

4.12.1 ROUTES OF ADMINISTRATION

Suitable routes of administration may, for example, include oral, rectal,

25   transmucosal, or intestinal administration; parenteral delivery, including intramuscular, subcutaneous, intramedullary injections, as well as intrathecal, direct intraventricular, intravenous, intraperitoneal, intranasal, or intraocular injections. Administration of protein or other active ingredient of the present invention used in the pharmaceutical composition or to practice the method of the present invention can be carried out in a

30   variety of conventional ways, such as oral ingestion, inhalation, topical application or

cutaneous, subcutaneous, intraperitoneal, parenteral or intravenous injection. Intravenous administration to the patient is preferred.

Alternately, one may administer the compound in a local rather than systemic manner, for example, via injection of the compound directly into a arthritic joints or in

5   fibrotic tissue, often in a depot or sustained release formulation. In order to prevent the scarring process frequently occurring as complication of glaucoma surgery, the compounds may be administered topically, for example, as eye drops. Furthermore, one may administer the drug in a targeted drug delivery system, for example, in a liposome coated with a specific antibody, targeting, for example, arthritic or fibrotic tissue. The

10   liposomes will be targeted to and taken up selectively by the afflicted tissue.

The polypeptides of the invention are administered by any route that delivers an effective dosage to the desired site of action. The determination of a suitable route of administration and an effective dosage for a particular indication is within the level of skill in the art. Preferably for wound treatment, one administers the therapeutic

15   compound directly to the site. Suitable dosage ranges for the polypeptides of the invention can be extrapolated from these dosages or from similar studies in appropriate animal models. Dosages can then be adjusted as necessary by the clinician to provide maximal therapeutic benefit.

20   **4.12.2 COMPOSITIONS/FORMULATIONS**

Pharmaceutical compositions for use in accordance with the present invention thus may be formulated in a conventional manner using one or more physiologically acceptable carriers comprising excipients and auxiliaries which facilitate processing of the active compounds into preparations which can be used pharmaceutically. These

25   pharmaceutical compositions may be manufactured in a manner that is itself known, *e.g.*, by means of conventional mixing, dissolving, granulating, dragee-making, levigating, emulsifying, encapsulating, entrapping or lyophilizing processes. Proper formulation is dependent upon the route of administration chosen. When a therapeutically effective amount of protein or other active ingredient of the present invention is administered

30   orally, protein or other active ingredient of the present invention will be in the form of a tablet, capsule, powder, solution or elixir. When administered in tablet form, the

pharmaceutical composition of the invention may additionally contain a solid carrier such as a gelatin or an adjuvant. The tablet, capsule, and powder contain from about 5 to 95% protein or other active ingredient of the present invention, and preferably from about 25 to 90% protein or other active ingredient of the present invention. When administered in

5   liquid form, a liquid carrier such as water, petroleum, oils of animal or plant origin such as peanut oil, mineral oil, soybean oil, or sesame oil, or synthetic oils may be added. The liquid form of the pharmaceutical composition may further contain physiological saline solution, dextrose or other saccharide solution, or glycols such as ethylene glycol, propylene glycol or polyethylene glycol. When administered in liquid form, the

10   pharmaceutical composition contains from about 0.5 to 90% by weight of protein or other active ingredient of the present invention, and preferably from about 1 to 50% protein or other active ingredient of the present invention.

When a therapeutically effective amount of protein or other active ingredient of the present invention is administered by intravenous, cutaneous or subcutaneous

15   injection, protein or other active ingredient of the present invention will be in the form of a pyrogen-free, parenterally acceptable aqueous solution. The preparation of such parenterally acceptable protein or other active ingredient solutions, having due regard to pH, isotonicity, stability, and the like, is within the skill in the art. A preferred pharmaceutical composition for intravenous, cutaneous, or subcutaneous injection should

20   contain, in addition to protein or other active ingredient of the present invention, an isotonic vehicle such as Sodium Chloride Injection, Ringer's Injection, Dextrose Injection, Dextrose and Sodium Chloride Injection, Lactated Ringer's Injection, or other vehicle as known in the art. The pharmaceutical composition of the present invention may also contain stabilizers, preservatives, buffers, antioxidants, or other additives

25   known to those of skill in the art. For injection, the agents of the invention may be formulated in aqueous solutions, preferably in physiologically compatible buffers such as Hanks's solution, Ringer's solution, or physiological saline buffer. For transmucosal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art.

30   For oral administration, the compounds can be formulated readily by combining the active compounds with pharmaceutically acceptable carriers well known in the art.

Such carriers enable the compounds of the invention to be formulated as tablets, pills, dragees, capsules, liquids, gels, syrups, slurries, suspensions and the like, for oral ingestion by a patient to be treated. Pharmaceutical preparations for oral use can be obtained from a solid excipient, optionally grinding a resulting mixture, and processing

5   the mixture of granules, after adding suitable auxiliaries, if desired, to obtain tablets or dragee cores. Suitable excipients are, in particular, fillers such as sugars, including lactose, sucrose, mannitol, or sorbitol; cellulose preparations such as, for example, maize starch, wheat starch, rice starch, potato starch, gelatin, gum tragacanth, methyl cellulose, hydroxypropylmethyl-cellulose, sodium carboxymethylcellulose, and/or

10   polyvinylpyrrolidone (PVP). If desired, disintegrating agents may be added, such as the cross-linked polyvinyl pyrrolidone, agar, or alginic acid or a salt thereof such as sodium alginate. Dragee cores are provided with suitable coatings. For this purpose, concentrated sugar solutions may be used, which may optionally contain gum arabic, talc, polyvinyl pyrrolidone, carbopol gel, polyethylene glycol, and/or titanium dioxide, lacquer

15   solutions, and suitable organic solvents or solvent mixtures. Dyestuffs or pigments may be added to the tablets or dragee coatings for identification or to characterize different combinations of active compound doses.

Pharmaceutical preparations which can be used orally include push-fit capsules made of gelatin, as well as soft, sealed capsules made of gelatin and a plasticizer, such as

20   glycerol or sorbitol. The push-fit capsules can contain the active ingredients in admixture with filler such as lactose, binders such as starches, and/or lubricants such as talc or magnesium stearate and, optionally, stabilizers. In soft capsules, the active compounds may be dissolved or suspended in suitable liquids, such as fatty oils, liquid paraffin, or liquid polyethylene glycols. In addition, stabilizers may be added. All formulations for

25   oral administration should be in dosages suitable for such administration. For buccal administration, the compositions may take the form of tablets or lozenges formulated in conventional manner.

For administration by inhalation, the compounds for use according to the present invention are conveniently delivered in the form of an aerosol spray presentation from

30   pressurized packs or a nebuliser, with the use of a suitable propellant, e.g., dichlorodifluoromethane, trichlorofluoromethane, dichlorotetrafluoroethane, carbon

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dioxide or other suitable gas. In the case of a pressurized aerosol the dosage unit may be determined by providing a valve to deliver a metered amount. Capsules and cartridges of, *e.g.*, gelatin for use in an inhaler or insufflator may be formulated containing a powder mix of the compound and a suitable powder base such as lactose or starch. The

5   compounds may be formulated for parenteral administration by injection, *e.g.*, by bolus injection or continuous infusion. Formulations for injection may be presented in unit dosage form, *e.g.*, in ampules or in multi-dose containers, with an added preservative. The compositions may take such forms as suspensions, solutions or emulsions in oily or aqueous vehicles, and may contain formulatory agents such as suspending, stabilizing

10   and/or dispersing agents.

Pharmaceutical formulations for parenteral administration include aqueous solutions of the active compounds in water-soluble form. Additionally, suspensions of the active compounds may be prepared as appropriate oily injection suspensions. Suitable lipophilic solvents or vehicles include fatty oils such as sesame oil, or synthetic

15   fatty acid esters, such as ethyl oleate or triglycerides, or liposomes. Aqueous injection suspensions may contain substances which increase the viscosity of the suspension, such as sodium carboxymethyl cellulose, sorbitol, or dextran. Optionally, the suspension may also contain suitable stabilizers or agents which increase the solubility of the compounds to allow for the preparation of highly concentrated solutions. Alternatively, the active

20   ingredient may be in powder form for constitution with a suitable vehicle, *e.g.*, sterile pyrogen-free water, before use.

The compounds may also be formulated in rectal compositions such as suppositories or retention enemas, *e.g.*, containing conventional suppository bases such as cocoa butter or other glycerides. In addition to the formulations described previously, the

25   compounds may also be formulated as a depot preparation. Such long acting formulations may be administered by implantation (for example subcutaneously or intramuscularly) or by intramuscular injection. Thus, for example, the compounds may be formulated with suitable polymeric or hydrophobic materials (for example as an emulsion in an acceptable oil) or ion exchange resins, or as sparingly soluble derivatives,

30   for example, as a sparingly soluble salt.

A pharmaceutical carrier for the hydrophobic compounds of the invention is a co-solvent system comprising benzyl alcohol, a nonpolar surfactant, a water-miscible organic polymer, and an aqueous phase. The co-solvent system may be the VPD co-solvent system. VPD is a solution of 3% w/v benzyl alcohol, 8% w/v of the nonpolar surfactant polysorbate 80, and 65% w/v polyethylene glycol 300, made up to volume in absolute ethanol. The VPD co-solvent system (VPD:5W) consists of VPD diluted 1:1 with a 5% dextrose in water solution. This co-solvent system dissolves hydrophobic compounds well, and itself produces low toxicity upon systemic administration. Naturally, the proportions of a co-solvent system may be varied considerably without destroying its solubility and toxicity characteristics. Furthermore, the identity of the co-solvent components may be varied: for example, other low-toxicity nonpolar surfactants may be used instead of polysorbate 80; the fraction size of polyethylene glycol may be varied; other biocompatible polymers may replace polyethylene glycol, e.g. polyvinyl pyrrolidone; and other sugars or polysaccharides may substitute for dextrose. Alternatively, other delivery systems for hydrophobic pharmaceutical compounds may be employed. Liposomes and emulsions are well known examples of delivery vehicles or carriers for hydrophobic drugs. Certain organic solvents such as dimethylsulfoxide also may be employed, although usually at the cost of greater toxicity. Additionally, the compounds may be delivered using a sustained-release system, such as semipermeable matrices of solid hydrophobic polymers containing the therapeutic agent. Various types of sustained-release materials have been established and are well known by those skilled in the art. Sustained-release capsules may, depending on their chemical nature, release the compounds for a few weeks up to over 100 days. Depending on the chemical nature and the biological stability of the therapeutic reagent, additional strategies for protein or other active ingredient stabilization may be employed.

The pharmaceutical compositions also may comprise suitable solid or gel phase carriers or excipients. Examples of such carriers or excipients include but are not limited to calcium carbonate, calcium phosphate, various sugars, starches, cellulose derivatives, gelatin, and polymers such as polyethylene glycols. Many of the active ingredients of the invention may be provided as salts with pharmaceutically compatible counter ions. Such pharmaceutically acceptable base addition salts are those salts which retain the biological

effectiveness and properties of the free acids and which are obtained by reaction with inorganic or organic bases such as sodium hydroxide, magnesium hydroxide, ammonia, trialkylamine, dialkylamine, monoalkylamine, dibasic amino acids, sodium acetate, potassium benzoate, triethanol amine and the like.

5   The pharmaceutical composition of the invention may be in the form of a complex of the protein(s) or other active ingredient(s) of present invention along with protein or peptide antigens. The protein and/or peptide antigen will deliver a stimulatory signal to both B and T lymphocytes. B lymphocytes will respond to antigen through their surface immunoglobulin receptor. T lymphocytes will respond to antigen through the T

10   cell receptor (TCR) following presentation of the antigen by MHC proteins. MHC and structurally related proteins including those encoded by class I and class II MHC genes on host cells will serve to present the peptide antigen(s) to T lymphocytes. The antigen components could also be supplied as purified MHC-peptide complexes alone or with co-stimulatory molecules that can directly signal T cells. Alternatively antibodies able to

15   bind surface immunoglobulin and other molecules on B cells as well as antibodies able to bind the TCR and other molecules on T cells can be combined with the pharmaceutical composition of the invention.

The pharmaceutical composition of the invention may be in the form of a liposome in which protein of the present invention is combined, in addition to other

20   pharmaceutically acceptable carriers, with amphipathic agents such as lipids which exist in aggregated form as micelles, insoluble monolayers, liquid crystals, or lamellar layers in aqueous solution. Suitable lipids for liposomal formulation include, without limitation, monoglycerides, diglycerides, sulfatides, lysolecithins, phospholipids, saponin, bile acids, and the like. Preparation of such liposomal formulations is within the level of skill in the

25   art, as disclosed, for example, in U.S. Patent Nos. 4,235,871; 4,501,728; 4,837,028; and 4,737,323, all of which are incorporated herein by reference.

The amount of protein or other active ingredient of the present invention in the pharmaceutical composition of the present invention will depend upon the nature and severity of the condition being treated, and on the nature of prior treatments which the

30   patient has undergone. Ultimately, the attending physician will decide the amount of protein or other active ingredient of the present invention with which to treat each

individual patient. Initially, the attending physician will administer low doses of protein

or other active ingredient of the present invention and observe the patient's response.

Larger doses of protein or other active ingredient of the present invention may be

administered until the optimal therapeutic effect is obtained for the patient, and at that

5   point the dosage is not increased further. It is contemplated that the various

pharmaceutical compositions used to practice the method of the present invention should

contain about 0.01 μg to about 100 mg (preferably about 0.1 μg to about 10 mg, more

preferably about 0.1 μg to about 1 mg) of protein or other active ingredient of the present

invention per kg body weight. For compositions of the present invention which are

10   useful for bone, cartilage, tendon or ligament regeneration, the therapeutic method

includes administering the composition topically, systematically, or locally as an implant

or device. When administered, the therapeutic composition for use in this invention is, of

course, in a pyrogen-free, physiologically acceptable form. Further, the composition may

desirably be encapsulated or injected in a viscous form for delivery to the site of bone,

15   cartilage or tissue damage. Topical administration may be suitable for wound healing

and tissue repair. Therapeutically useful agents other than a protein or other active

ingredient of the invention which may also optionally be included in the composition as

described above, may alternatively or additionally, be administered simultaneously or

sequentially with the composition in the methods of the invention. Preferably for bone

20   and/or cartilage formation, the composition would include a matrix capable of delivering

the protein-containing or other active ingredient-containing composition to the site of

bone and/or cartilage damage, providing a structure for the developing bone and cartilage

and optimally capable of being resorbed into the body. Such matrices may be formed of

materials presently in use for other implanted medical applications.

25   The choice of matrix material is based on biocompatibility, biodegradability,

mechanical properties, cosmetic appearance and interface properties. The particular

application of the compositions will define the appropriate formulation. Potential

matrices for the compositions may be biodegradable and chemically defined calcium

sulfate, tricalcium phosphate, hydroxyapatite, polylactic acid, polyglycolic acid and

30   polyanhydrides. Other potential materials are biodegradable and biologically

well-defined, such as bone or dermal collagen. Further matrices are comprised of pure

proteins or extracellular matrix components. Other potential matrices are

nonbiodegradable and chemically defined, such as sintered hydroxyapatite, bioglass,

aluminates, or other ceramics. Matrices may be comprised of combinations of any of the

above mentioned types of material, such as polylactic acid and hydroxyapatite or

5   collagen and tricalcium phosphate. The bioceramics may be altered in composition, such

as in calcium-aluminate-phosphate and processing to alter pore size, particle size, particle

shape, and biodegradability. Presently preferred is a 50:50 (mole weight) copolymer of

lactic acid and glycolic acid in the form of porous particles having diameters ranging

from 150 to 800 microns. In some applications, it will be useful to utilize a sequestering

10   agent, such as carboxymethyl cellulose or autologous blood clot, to prevent the protein

compositions from disassociating from the matrix.

A preferred family of sequestering agents is cellulosic materials such as

alkylcelluloses (including hydroxyalkylcelluloses), including methylcellulose,

ethylcellulose, hydroxyethylcellulose, hydroxypropylcellulose,

15   hydroxypropyl-methylcellulose, and carboxymethylcellulose, the most preferred being

cationic salts of carboxymethylcellulose (CMC). Other preferred sequestering agents

include hyaluronic acid, sodium alginate, poly(ethylene glycol), polyoxyethylene oxide,

carboxyvinyl polymer and poly(vinyl alcohol). The amount of sequestering agent useful

herein is 0.5-20 wt %, preferably 1-10 wt % based on total formulation weight, which

20   represents the amount necessary to prevent desorption of the protein from the polymer

matrix and to provide appropriate handling of the composition, yet not so much that the

progenitor cells are prevented from infiltrating the matrix, thereby providing the protein

the opportunity to assist the osteogenic activity of the progenitor cells. In further

compositions, proteins or other active ingredients of the invention may be combined with

25   other agents beneficial to the treatment of the bone and/or cartilage defect, wound, or

tissue in question. These agents include various growth factors such as epidermal growth

factor (EGF), platelet derived growth factor (PDGF), transforming growth factors

(TGF-α and TGF-β), and insulin-like growth factor (IGF).

The therapeutic compositions are also presently valuable for veterinary

30   applications. Particularly domestic animals and thoroughbred horses, in addition to

humans, are desired patients for such treatment with proteins or other active ingredients

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of the present invention. The dosage regimen of a protein-containing pharmaceutical composition to be used in tissue regeneration will be determined by the attending physician considering various factors which modify the action of the proteins, *e.g.*, amount of tissue weight desired to be formed, the site of damage, the condition of the

5   damaged tissue, the size of a wound, type of damaged tissue (*e.g.*, bone), the patient's age, sex, and diet, the severity of any infection, time of administration and other clinical factors. The dosage may vary with the type of matrix used in the reconstitution and with inclusion of other proteins in the pharmaceutical composition. For example, the addition of other known growth factors, such as IGF I (insulin like growth factor I), to the final

10   composition, may also effect the dosage. Progress can be monitored by periodic assessment of tissue/bone growth and/or repair, for example, X-rays, histomorphometric determinations and tetracycline labeling.

Polynucleotides of the present invention can also be used for gene therapy. Such polynucleotides can be introduced either in vivo or ex vivo into cells for expression in a

15   mammalian subject. Polynucleotides of the invention may also be administered by other known methods for introduction of nucleic acid into a cell or organism (including, without limitation, in the form of viral vectors or naked DNA). Cells may also be cultured ex vivo in the presence of proteins of the present invention in order to proliferate or to produce a desired effect on or activity in such cells. Treated cells can then be

20   introduced in vivo for therapeutic purposes.

4.12.3 EFFECTIVE DOSAGE

Pharmaceutical compositions suitable for use in the present invention include compositions wherein the active ingredients are contained in an effective amount to

25   achieve its intended purpose. More specifically, a therapeutically effective amount means an amount effective to prevent development of or to alleviate the existing symptoms of the subject being treated. Determination of the effective amount is well within the capability of those skilled in the art, especially in light of the detailed disclosure provided herein. For any compound used in the method of the invention, the

30   therapeutically effective dose can be estimated initially from appropriate in vitro assays. For example, a dose can be formulated in animal models to achieve a circulating

concentration range that can be used to more accurately determine useful doses in humans. For example, a dose can be formulated in animal models to achieve a circulating concentration range that includes the IC_{50} as determined in cell culture (*i.e.*, the concentration of the test compound which achieves a half-maximal inhibition of the

5   protein's biological activity). Such information can be used to more accurately determine useful doses in humans.

A therapeutically effective dose refers to that amount of the compound that results in amelioration of symptoms or a prolongation of survival in a patient. Toxicity and therapeutic efficacy of such compounds can be determined by standard pharmaceutical

10   procedures in cell cultures or experimental animals, *e.g.*, for determining the LD_{50} (the dose lethal to 50% of the population) and the ED_{50} (the dose therapeutically effective in 50% of the population). The dose ratio between toxic and therapeutic effects is the ·therapeutic index and it can be expressed as the ratio between LD_{50} and ED_{50}. Compounds which exhibit high therapeutic indices are preferred. The data obtained from

15   these cell culture assays and animal studies can be used in formulating a range of dosage for use in human. The dosage of such compounds lies preferably within a range of circulating concentrations that include the ED_{50} with little or no toxicity. The dosage may vary within this range depending upon the dosage form employed and the route of administration utilized. The exact formulation, route of administration and dosage can be

20   chosen by the individual physician in view of the patient's condition. See, *e.g.*, Fingl et al., 1975, in "The Pharmacological Basis of Therapeutics", Ch. 1 p.1. Dosage amount and interval may be adjusted individually to provide plasma levels of the active moiety which are sufficient to maintain the desired effects, or minimal effective concentration (MEC). The MEC will vary for each compound but can be estimated from *in vitro* data.

25   Dosages necessary to achieve the MEC will depend on individual characteristics and route of administration. However, HPLC assays or bioassays can be used to determine plasma concentrations.

Dosage intervals can also be determined using MEC value. Compounds should be administered using a regimen which maintains plasma levels above the MEC for

30   10-90% of the time, preferably between 30-90% and most preferably between 50-90%.

In cases of local administration or selective uptake, the effective local concentration of the drug may not be related to plasma concentration.

An exemplary dosage regimen for polypeptides or other compositions of the invention will be in the range of about 0.01 μg/kg to 100 mg/kg of body weight daily,

5   with the preferred dose being about 0.1 μg/kg to 25 mg/kg of patient body weight daily, varying in adults and children. Dosing may be once daily, or equivalent doses may be delivered at longer or shorter intervals.

The amount of composition administered will, of course, be dependent on the subject being treated, on the subject's age and weight, the severity of the affliction, the

10   manner of administration and the judgment of the prescribing physician.

4.12.4 PACKAGING

The compositions may, if desired, be presented in a pack or dispenser device which may contain one or more unit dosage forms containing the active ingredient. The

15   pack may, for example, comprise metal or plastic foil, such as a blister pack. The pack or dispenser device may be accompanied by instructions for administration. Compositions comprising a compound of the invention formulated in a compatible pharmaceutical carrier may also be prepared, placed in an appropriate container, and labeled for treatment of an indicated condition.

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4.13 ANTIBODIES

Also included in the invention are antibodies to proteins, or fragments of proteins of the invention. The term "antibody" as used herein refers to immunoglobulin molecules and immunologically active portions of immunoglobulin (Ig) molecules, i.e., molecules

25   that contain an antigen binding site that specifically binds (immunoreacts with) an antigen. Such antibodies include, but are not limited to, polyclonal, monoclonal, chimeric, single chain, F_{ab}, $F_{ab'}$ and $F_{(ab')2}$ fragments, and an F_{ab} expression library. In general, an antibody molecule obtained from humans relates to any of the classes IgG, IgM, IgA, IgE and IgD, which differ from one another by the nature of the heavy chain

30   present in the molecule. Certain classes have subclasses as well, such as IgG_1, IgG_2, and others. Furthermore, in humans, the light chain may be a kappa chain or a lambda chain.

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Reference herein to antibodies includes a reference to all such classes, subclasses and types of human antibody species.

An isolated related protein of the invention may be intended to serve as an antigen, or a portion or fragment thereof, and additionally can be used as an immunogen to generate antibodies that immunospecifically bind the antigen, using standard techniques for polyclonal and monoclonal antibody preparation. The full-length protein can be used or, alternatively, the invention provides antigenic peptide fragments of the antigen for use as immunogens. An antigenic peptide fragment comprises at least 6 amino acid residues of the amino acid sequence of the full length protein, such as an amino acid sequence shown in SEQ ID NO: 4, and encompasses an epitope thereof such that an antibody raised against the peptide forms a specific immune complex with the full length protein or with any fragment that contains the epitope. Preferably, the antigenic peptide comprises at least 10 amino acid residues, or at least 15 amino acid residues, or at least 20 amino acid residues, or at least 30 amino acid residues. Preferred epitopes encompassed by the antigenic peptide are regions of the protein that are located on its surface; commonly these are hydrophilic regions.

In certain embodiments of the invention, at least one epitope encompassed by the antigenic peptide is a region of -related protein that is located on the surface of the protein, e.g., a hydrophilic region. A hydrophobicity analysis of the human related protein sequence will indicate which regions of a related protein are particularly hydrophilic and, therefore, are likely to encode surface residues useful for targeting antibody production. As a means for targeting antibody production, hydropathy plots showing regions of hydrophilicity and hydrophobicity may be generated by any method well known in the art, including, for example, the Kyte Doolittle or the Hopp Woods methods, either with or without Fourier transformation. See, e.g., Hopp and Woods, 1981, *Proc. Nat. Acad. Sci. USA* 78: 3824-3828; Kyte and Doolittle 1982, *J. Mol. Biol.* 157: 105-142, each of which is incorporated herein by reference in its entirety. Antibodies that are specific for one or more domains within an antigenic protein, or derivatives, fragments, analogs or homologs thereof, are also provided herein.

90

A protein of the invention, or a derivative, fragment, analog, homolog or ortholog thereof, may be utilized as an immunogen in the generation of antibodies that immunospecifically bind these protein components.

Various procedures known within the art may be used for the production of polyclonal or monoclonal antibodies directed against a protein of the invention, or against derivatives, fragments, analogs homologs or orthologs thereof (see, for example, Antibodies: A Laboratory Manual, Harlow E, and Lane D, 1988, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, incorporated herein by reference). Some of these antibodies are discussed below.

5.13.1 Polyclonal Antibodies

For the production of polyclonal antibodies, various suitable host animals (e.g., rabbit, goat, mouse or other mammal) may be immunized by one or more injections with the native protein, a synthetic variant thereof, or a derivative of the foregoing. An appropriate immunogenic preparation can contain, for example, the naturally occurring immunogenic protein, a chemically synthesized polypeptide representing the immunogenic protein, or a recombinantly expressed immunogenic protein. Furthermore, the protein may be conjugated to a second protein known to be immunogenic in the mammal being immunized. Examples of such immunogenic proteins include but are not limited to keyhole limpet hemocyanin, serum albumin, bovine thyroglobulin, and soybean trypsin inhibitor. The preparation can further include an adjuvant. Various adjuvants used to increase the immunological response include, but are not limited to, Freund's (complete and incomplete), mineral gels (e.g., aluminum hydroxide), surface active substances (e.g., lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions, dinitrophenol, etc.), adjuvants usable in humans such as Bacille Calmette-Guerin and Corynebacterium parvum, or similar immunostimulatory agents. Additional examples of adjuvants which can be employed include MPL-TDM adjuvant (monophosphoryl Lipid A, synthetic trehalose dicorynomycolate).

The polyclonal antibody molecules directed against the immunogenic protein can be isolated from the mammal (e.g., from the blood) and further purified by well known techniques, such as affinity chromatography using protein A or protein G, which provide

primarily the IgG fraction of immune serum. Subsequently, or alternatively, the specific antigen which is the target of the immunoglobulin sought, or an epitope thereof, may be immobilized on a column to purify the immune specific antibody by immunoaffinity chromatography. Purification of immunoglobulins is discussed, for example, by D.

5   Wilkinson (The Scientist, published by The Scientist, Inc., Philadelphia PA, Vol. 14, No. 8 (April 17, 2000), pp. 25-28).

5.13.2 Monoclonal Antibodies

The term "monoclonal antibody" (MAb) or "monoclonal antibody composition",

10   as used herein, refers to a population of antibody molecules that contain only one molecular species of antibody molecule consisting of a unique light chain gene product and a unique heavy chain gene product. In particular, the complementarity determining regions (CDRs) of the monoclonal antibody are identical in all the molecules of the population. MAbs thus contain an antigen binding site capable of immunoreacting with a

15   particular epitope of the antigen characterized by a unique binding affinity for it.

Monoclonal antibodies can be prepared using hybridoma methods, such as those described by Kohler and Milstein, Nature, 256:495 (1975). In a hybridoma method, a mouse, hamster, or other appropriate host animal, is typically immunized with an immunizing agent to elicit lymphocytes that produce or are capable of producing

20   antibodies that will specifically bind to the immunizing agent. Alternatively, the lymphocytes can be immunized in vitro.

The immunizing agent will typically include the protein antigen, a fragment thereof or a fusion protein thereof. Generally, either peripheral blood lymphocytes are used if cells of human origin are desired, or spleen cells or lymph node cells are used if non-human

25   mammalian sources are desired. The lymphocytes are then fused with an immortalized cell line using a suitable fusing agent, such as polyethylene glycol, to form a hybridoma cell (Goding, Monoclonal Antibodies: Principles and Practice, Academic Press, (1986) pp. 59-103). Immortalized cell lines are usually transformed mammalian cells, particularly myeloma cells of rodent, bovine and human origin. Usually, rat or mouse

30   myeloma cell lines are employed. The hybridoma cells can be cultured in a suitable culture medium that preferably contains one or more substances that inhibit the growth or

survival of the unfused, immortalized cells. For example, if the parental cells lack the enzyme hypoxanthine guanine phosphoribosyl transferase (HGPRT or HPRT), the culture medium for the hybridomas typically will include hypoxanthine, aminopterin, and thymidine ("HAT medium"), which substances prevent the growth of HGPRT-deficient

5   cells.

Preferred immortalized cell lines are those that fuse efficiently, support stable high level expression of antibody by the selected antibody-producing cells, and are sensitive to a medium such as HAT medium. More preferred immortalized cell lines are murine myeloma lines, which can be obtained, for instance, from the Salk Institute Cell

10   Distribution Center, San Diego, California and the American Type Culture Collection, Manassas, Virginia. Human myeloma and mouse-human heteromyeloma cell lines also have been described for the production of human monoclonal antibodies (Kozbor, <u>J. Immunol.</u>, <u>133</u>:3001 (1984); Brodeur et al., <u>Monoclonal Antibody Production Techniques and Applications</u>, Marcel Dekker, Inc., New York, (1987) pp. 51-63).

15   The culture medium in which the hybridoma cells are cultured can then be assayed for the presence of monoclonal antibodies directed against the antigen. Preferably, the binding specificity of monoclonal antibodies produced by the hybridoma cells is determined by immunoprecipitation or by an in vitro binding assay, such as radioimmunoassay (RIA) or enzyme-linked immunoabsorbent assay (ELISA). Such

20   techniques and assays are known in the art. The binding affinity of the monoclonal antibody can, for example, be determined by the Scatchard analysis of Munson and Pollard, <u>Anal. Biochem.</u>, <u>107</u>:220 (1980). Preferably, antibodies having a high degree of specificity and a high binding affinity for the target antigen are isolated.

After the desired hybridoma cells are identified, the clones can be subcloned by

25   limiting dilution procedures and grown by standard methods. Suitable culture media for this purpose include, for example, Dulbecco's Modified Eagle's Medium and RPMI-1640 medium. Alternatively, the hybridoma cells can be grown in vivo as ascites in a mammal.

The monoclonal antibodies secreted by the subclones can be isolated or purified from the

30   culture medium or ascites fluid by conventional immunoglobulin purification procedures

such as, for example, protein A-Sepharose, hydroxylapatite chromatography, gel electrophoresis, dialysis, or affinity chromatography.

The monoclonal antibodies can also be made by recombinant DNA methods, such as those described in U.S. Patent No. 4,816,567. DNA encoding the monoclonal

5   antibodies of the invention can be readily isolated and sequenced using conventional procedures (e.g., by using oligonucleotide probes that are capable of binding specifically to genes encoding the heavy and light chains of murine antibodies). The hybridoma cells of the invention serve as a preferred source of such DNA. Once isolated, the DNA can be placed into expression vectors, which are then transfected into host cells such as

10   simian COS cells, Chinese hamster ovary (CHO) cells, or myeloma cells that do not otherwise produce immunoglobulin protein, to obtain the synthesis of monoclonal antibodies in the recombinant host cells. The DNA also can be modified, for example, by substituting the coding sequence for human heavy and light chain constant domains in place of the homologous murine sequences (U.S. Patent No. 4,816,567; Morrison, Nature

15   368, 812-13 (1994)) or by covalently joining to the immunoglobulin coding sequence all or part of the coding sequence for a non-immunoglobulin polypeptide. Such a non-immunoglobulin polypeptide can be substituted for the constant domains of an antibody of the invention, or can be substituted for the variable domains of one antigen-combining site of an antibody of the invention to create a chimeric bivalent antibody.

20

5.13.2 Humanized Antibodies

The antibodies directed against the protein antigens of the invention can further comprise humanized antibodies or human antibodies. These antibodies are suitable for administration to humans without engendering an immune response by the human against

25   the administered immunoglobulin. Humanized forms of antibodies are chimeric immunoglobulins, immunoglobulin chains or fragments thereof (such as Fv, Fab, Fab', F(ab')2 or other antigen-binding subsequences of antibodies) that are principally comprised of the sequence of a human immunoglobulin, and contain minimal sequence derived from a non-human immunoglobulin. Humanization can be performed following

30   the method of Winter and co-workers (Jones et al., Nature, 321:522-525 (1986); Riechmann et al., Nature, 332:323-327 (1988); Verhoeyen et al., Science, 239:1534-1536

(1988)), by substituting rodent CDRs or CDR sequences for the corresponding sequences
of a human antibody. (See also U.S. Patent No. 5,225,539.) In some instances, Fv
framework residues of the human immunoglobulin are replaced by corresponding non-
human residues. Humanized antibodies can also comprise residues which are found
5   neither in the recipient antibody nor in the imported CDR or framework sequences. In
general, the humanized antibody will comprise substantially all of at least one, and
typically two, variable domains, in which all or substantially all of the CDR regions
correspond to those of a non-human immunoglobulin and all or substantially all of the
framework regions are those of a human immunoglobulin consensus sequence. The
10   humanized antibody optimally also will comprise at least a portion of an immunoglobulin
constant region (Fc), typically that of a human immunoglobulin (Jones et al., 1986;
Riechmann et al., 1988; and Presta, Curr. Op. Struct. Biol., 2:593-596 (1992)).

       5.13.3 Human Antibodies

15   Fully human antibodies relate to antibody molecules in which essentially the
entire sequences of both the light chain and the heavy chain, including the CDRs, arise
from human genes. Such antibodies are termed "human antibodies", or "fully human
antibodies" herein. Human monoclonal antibodies can be prepared by the trioma
technique; the human B-cell hybridoma technique (see Kozbor, et al., 1983 Immunol
20   Today 4: 72) and the EBV hybridoma technique to produce human monoclonal
antibodies (see Cole, et al., 1985 In: MONOCLONAL ANTIBODIES AND CANCER THERAPY,
Alan R. Liss, Inc., pp. 77-96). Human monoclonal antibodies may be utilized in the
practice of the present invention and may be produced by using human hybridomas (see
Cote, et al., 1983. Proc Natl Acad Sci USA 80: 2026-2030) or by transforming human
25   B-cells with Epstein Barr Virus in vitro (see Cole, et al., 1985 In: MONOCLONAL
ANTIBODIES AND CANCER THERAPY, Alan R. Liss, Inc., pp. 77-96).

       In addition, human antibodies can also be produced using additional techniques,
including phage display libraries (Hoogenboom and Winter, J. Mol. Biol., 227:381
(1991); Marks et al., J. Mol. Biol., 222:581 (1991)). Similarly, human antibodies can be
30   made by introducing human immunoglobulin loci into transgenic animals, e.g., mice in
which the endogenous immunoglobulin genes have been partially or completely

inactivated. Upon challenge, human antibody production is observed, which closely

resembles that seen in humans in all respects, including gene rearrangement, assembly,

and antibody repertoire. This approach is described, for example, in U.S. Patent Nos.

5,545,807; 5,545,806; 5,569,825; 5,625,126; 5,633,425; 5,661,016, and in Marks et al.

5   (Bio/Technology 10, 779-783 (1992)); Lonberg et al. (Nature 368 856-859 (1994));

Morrison (Nature 368, 812-13 (1994)); Fishwild et al,(Nature Biotechnology 14, 845-51

(1996)); Neuberger (Nature Biotechnology 14, 826 (1996)); and Lonberg and Huszar

(Intern. Rev. Immunol. 13 65-93 (1995)).

Human antibodies may additionally be produced using transgenic nonhuman

10   animals which are modified so as to produce fully human antibodies rather than the

animal's endogenous antibodies in response to challenge by an antigen. (See PCT

publication WO94/02602). The endogenous genes encoding the heavy and light

immunoglobulin chains in the nonhuman host have been incapacitated, and active loci

encoding human heavy and light chain immunoglobulins are inserted into the host's

15   genome. The human genes are incorporated, for example, using yeast artificial

chromosomes containing the requisite human DNA segments. An animal which provides

all the desired modifications is then obtained as progeny by crossbreeding intermediate

transgenic animals containing fewer than the full complement of the modifications. The

preferred embodiment of such a nonhuman animal is a mouse, and is termed the

20   Xenomouse™ as disclosed in PCT publications WO 96/33735 and WO 96/34096. This

animal produces B cells which secrete fully human immunoglobulins. The antibodies

can be obtained directly from the animal after immunization with an immunogen of

interest, as, for example, a preparation of a polyclonal antibody, or alternatively from

immortalized B cells derived from the animal, such as hybridomas producing monoclonal

25   antibodies. Additionally, the genes encoding the immunoglobulins with human variable

regions can be recovered and expressed to obtain the antibodies directly, or can be further

modified to obtain analogs of antibodies such as, for example, single chain Fv molecules.

An example of a method of producing a nonhuman host, exemplified as a mouse,

lacking expression of an endogenous immunoglobulin heavy chain is disclosed in U.S.

30   Patent No. 5,939,598. It can be obtained by a method including deleting the J segment

genes from at least one endogenous heavy chain locus in an embryonic stem cell to

prevent rearrangement of the locus and to prevent formation of a transcript of a

rearranged immunoglobulin heavy chain locus, the deletion being effected by a targeting

vector containing a gene encoding a selectable marker; and producing from the

embryonic stem cell a transgenic mouse whose somatic and germ cells contain the gene

5   encoding the selectable marker.

A method for producing an antibody of interest, such as a human antibody, is

disclosed in U.S. Patent No. 5,916,771. It includes introducing an expression vector that

contains a nucleotide sequence encoding a heavy chain into one mammalian host cell in

culture, introducing an expression vector containing a nucleotide sequence encoding a

10   light chain into another mammalian host cell, and fusing the two cells to form a hybrid

cell. The hybrid cell expresses an antibody containing the heavy chain and the light

chain.

In a further improvement on this procedure, a method for identifying a clinically

relevant epitope on an immunogen, and a correlative method for selecting an antibody

15   that binds immunospecifically to the relevant epitope with high affinity, are disclosed in

PCT publication WO 99/53049.

5.13.4 F_{ab} Fragments and Single Chain Antibodies

According to the invention, techniques can be adapted for the production of

20   single-chain antibodies specific to an antigenic protein of the invention (see e.g., U.S.

Patent No. 4,946,778). In addition, methods can be adapted for the construction of F_{ab}

expression libraries (see e.g., Huse, et al., 1989 Science 246: 1275-1281) to allow rapid

and effective identification of monoclonal F_{ab} fragments with the desired specificity for a

protein or derivatives, fragments, analogs or homologs thereof. Antibody fragments that

25   contain the idiotypes to a protein antigen may be produced by techniques known in the

art including, but not limited to: (i) an $F_{(ab')2}$ fragment produced by pepsin digestion of an

antibody molecule; (ii) an F_{ab} fragment generated by reducing the disulfide bridges of an

$F_{(ab')2}$ fragment; (iii) an F_{ab} fragment generated by the treatment of the antibody molecule

with papain and a reducing agent and (iv) F_v fragments.

30

5.13.5 Bispecific Antibodies

Bispecific antibodies are monoclonal, preferably human or humanized, antibodies that have binding specificities for at least two different antigens. In the present case, one of the binding specificities is for an antigenic protein of the invention. The second binding target is any other antigen, and advantageously is a cell-surface protein or

5   receptor or receptor subunit.

Methods for making bispecific antibodies are known in the art. Traditionally, the recombinant production of bispecific antibodies is based on the co-expression of two immunoglobulin heavy-chain/light-chain pairs, where the two heavy chains have different specificities (Milstein and Cuello, Nature, 305:537-539 (1983)). Because of the

10   random assortment of immunoglobulin heavy and light chains, these hybridomas (quadromas) produce a potential mixture of ten different antibody molecules, of which only one has the correct bispecific structure. The purification of the correct molecule is usually accomplished by affinity chromatography steps. Similar procedures are disclosed in WO 93/08829, published 13 May 1993, and in Traunecker et al., 1991 EMBO J.,

15   10:3655-3659.

Antibody variable domains with the desired binding specificities (antibody-antigen combining sites) can be fused to immunoglobulin constant domain sequences. The fusion preferably is with an immunoglobulin heavy-chain constant domain, comprising at least part of the hinge, CH2, and CH3 regions. It is preferred to have the

20   first heavy-chain constant region (CH1) containing the site necessary for light-chain binding present in at least one of the fusions. DNAs encoding the immunoglobulin heavy-chain fusions and, if desired, the immunoglobulin light chain, are inserted into separate expression vectors, and are co-transfected into a suitable host organism. For further details of generating bispecific antibodies see, for example, Suresh et al., Methods

25   in Enzymology, 121:210 (1986).

According to another approach described in WO 96/27011, the interface between a pair of antibody molecules can be engineered to maximize the percentage of heterodimers which are recovered from recombinant cell culture. The preferred interface comprises at least a part of the CH3 region of an antibody constant domain. In this

30   method, one or more small amino acid side chains from the interface of the first antibody molecule are replaced with larger side chains (e.g. tyrosine or tryptophan).

Compensatory "cavities" of identical or similar size to the large side chain(s) are created

on the interface of the second antibody molecule by replacing large amino acid side

chains with smaller ones (e.g. alanine or threonine). This provides a mechanism for

increasing the yield of the heterodimer over other unwanted end-products such as

5   homodimers.

Bispecific antibodies can be prepared as full length antibodies or antibody

fragments (e.g. F(ab')₂ bispecific antibodies). Techniques for generating bispecific

antibodies from antibody fragments have been described in the literature. For example,

bispecific antibodies can be prepared using chemical linkage. Brennan et al., Science

10   229:81 (1985) describe a procedure wherein intact antibodies are proteolytically cleaved

to generate F(ab')₂ fragments. These fragments are reduced in the presence of the dithiol

complexing agent sodium arsenite to stabilize vicinal dithiols and prevent intermolecular

disulfide formation. The Fab' fragments generated are then converted to

thionitrobenzoate (TNB) derivatives. One of the Fab'-TNB derivatives is then

15   reconverted to the Fab'-thiol by reduction with mercaptoethylamine and is mixed with an

equimolar amount of the other Fab'-TNB derivative to form the bispecific antibody. The

bispecific antibodies produced can be used as agents for the selective immobilization of

enzymes.

Additionally, Fab' fragments can be directly recovered from E. coli and

20   chemically coupled to form bispecific antibodies. Shalaby et al., J. Exp. Med.

175:217-225 (1992) describe the production of a fully humanized bispecific antibody

F(ab')₂ molecule. Each Fab' fragment was separately secreted from E. coli and subjected

to directed chemical coupling in vitro to form the bispecific antibody. The bispecific

antibody thus formed was able to bind to cells overexpressing the ErbB2 receptor and

25   normal human T cells, as well as trigger the lytic activity of human cytotoxic

lymphocytes against human breast tumor targets.

Various techniques for making and isolating bispecific antibody fragments

directly from recombinant cell culture have also been described. For example, bispecific

antibodies have been produced using leucine zippers. Kostelny et al., J. Immunol.

30   148(5):1547-1553 (1992). The leucine zipper peptides from the Fos and Jun proteins

were linked to the Fab' portions of two different antibodies by gene fusion. The antibody

homodimers were reduced at the hinge region to form monomers and then re-oxidized to form the antibody heterodimers. This method can also be utilized for the production of antibody homodimers. The "diabody" technology described by Hollinger et al., Proc. Natl. Acad. Sci. USA 90:6444-6448 (1993) has provided an alternative mechanism for

5   making bispecific antibody fragments. The fragments comprise a heavy-chain variable domain (V_H) connected to a light-chain variable domain (V_L) by a linker which is too short to allow pairing between the two domains on the same chain. Accordingly, the V_H and V_L domains of one fragment are forced to pair with the complementary V_L and V_H domains of another fragment, thereby forming two antigen-binding sites. Another

10   strategy for making bispecific antibody fragments by the use of single-chain Fv (sFv) dimers has also been reported. See, Gruber et al., J. Immunol. 152:5368 (1994).

Antibodies with more than two valencies are contemplated. For example, trispecific antibodies can be prepared. Tutt et al., J. Immunol. 147:60 (1991). Exemplary bispecific antibodies can bind to two different epitopes, at least one of which

15   originates in the protein antigen of the invention. Alternatively, an anti-antigenic arm of an immunoglobulin molecule can be combined with an arm which binds to a triggering molecule on a leukocyte such as a T-cell receptor molecule (e.g. CD2, CD3, CD28, or B7), or Fc receptors for IgG (FcγR), such as FcγRI (CD64), FcγRII (CD32) and FcγRIII (CD16) so as to focus cellular defense mechanisms to the cell expressing the particular

20   antigen. Bispecific antibodies can also be used to direct cytotoxic agents to cells which express a particular antigen. These antibodies possess an antigen-binding arm and an arm which binds a cytotoxic agent or a radionuclide chelator, such as EOTUBE, DPTA, DOTA, or TETA. Another bispecific antibody of interest binds the protein antigen described herein and further binds tissue factor (TF).

25

5.13.6 Heteroconjugate Antibodies

Heteroconjugate antibodies are also within the scope of the present invention. Heteroconjugate antibodies are composed of two covalently joined antibodies. Such antibodies have, for example, been proposed to target immune system cells to unwanted

30   cells (U.S. Patent No. 4,676,980), and for treatment of HIV infection (WO 91/00360; WO 92/200373; EP 03089). It is contemplated that the antibodies can be prepared in

vitro using known methods in synthetic protein chemistry, including those involving

crosslinking agents. For example, immunotoxins can be constructed using a disulfide

exchange reaction or by forming a thioether bond. Examples of suitable reagents for this

purpose include iminothiolate and methyl-4-mercaptobutyrimidate and those disclosed,

5   for example, in U.S. Patent No. 4,676,980.

5.13.7 Effector Function Engineering

It can be desirable to modify the antibody of the invention with respect to effector

function, so as to enhance, e.g., the effectiveness of the antibody in treating cancer. For

10   example, cysteine residue(s) can be introduced into the Fc region, thereby allowing

interchain disulfide bond formation in this region. The homodimeric antibody thus

generated can have improved internalization capability and/or increased complement-

mediated cell killing and antibody-dependent cellular cytotoxicity (ADCC). See Caron et

al., J. Exp Med., 176: 1191-1195 (1992) and Shopes, J. Immunol., 148: 2918-2922

15   (1992). Homodimeric antibodies with enhanced anti-tumor activity can also be prepared

using heterobifunctional cross-linkers as described in Wolff et al. Cancer Research, 53:

2560-2565 (1993). Alternatively, an antibody can be engineered that has dual Fc regions

and can thereby have enhanced complement lysis and ADCC capabilities. See Stevenson

et al., Anti-Cancer Drug Design, 3: 219-230 (1989).

20

5.13.8 Immunoconjugates

The invention also pertains to immunoconjugates comprising an antibody

conjugated to a cytotoxic agent such as a chemotherapeutic agent, toxin (e.g., an

enzymatically active toxin of bacterial, fungal, plant, or animal origin, or fragments

25   thereof), or a radioactive isotope (i.e., a radioconjugate).

Chemotherapeutic agents useful in the generation of such immunoconjugates have

been described above. Enzymatically active toxins and fragments thereof that can be

used include diphtheria A chain, nonbinding active fragments of diphtheria toxin,

exotoxin A chain (from Pseudomonas aeruginosa), ricin A chain, abrin A chain,

30   modeccin A chain, alpha-sarcin, Aleurites fordii proteins, dianthin proteins, Phytolaca

americana proteins (PAPI, PAPII, and PAP-S), momordica charantia inhibitor, curcin,

crotin, sapaonaria officinalis inhibitor, gelonin, mitogellin, restrictocin, phenomycin, enomycin, and the tricothecenes. A variety of radionuclides are available for the production of radioconjugated antibodies. Examples include ^{212}Bi, ^{131}I, ^{131}In, ^{90}Y, and ^{186}Re.

5   Conjugates of the antibody and cytotoxic agent are made using a variety of bifunctional protein-coupling agents such as N-succinimidyl-3-(2-pyridyldithiol) propionate (SPDP), iminothiolane (IT), bifunctional derivatives of imidoesters (such as dimethyl adipimidate HCL), active esters (such as disuccinimidyl suberate), aldehydes (such as glutareldehyde), bis-azido compounds (such as bis (p-azidobenzoyl)

10   hexanediamine), bis-diazonium derivatives (such as bis-(p-diazoniumbenzoyl)- ethylenediamine), diisocyanates (such as tolyene 2,6-diisocyanate), and bis-active fluorine compounds (such as 1,5-difluoro-2,4-dinitrobenzene). For example, a ricin immunotoxin can be prepared as described in Vitetta et al., Science, 238: 1098 (1987). Carbon-14-labeled 1-isothiocyanatobenzyl-3-methyldiethylene triaminepentaacetic acid

15   (MX-DTPA) is an exemplary chelating agent for conjugation of radionucleotide to the antibody. See WO94/11026.

          In another embodiment, the antibody can be conjugated to a "receptor" (such streptavidin) for utilization in tumor pretargeting wherein the antibody-receptor conjugate is administered to the patient, followed by removal of unbound conjugate from the

20   circulation using a clearing agent and then administration of a "ligand" (e.g., avidin) that is in turn conjugated to a cytotoxic agent.

4.14 COMPUTER READABLE SEQUENCES

          In one application of this embodiment, a nucleotide sequence of the present

25   invention can be recorded on computer readable media. As used herein, "computer readable media" refers to any medium which can be read and accessed directly by a computer. Such media include, but are not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD-ROM; electrical storage media such as RAM and ROM; and hybrids of these

30   categories such as magnetic/optical storage media. A skilled artisan can readily appreciate how any of the presently known computer readable mediums can be used to

create a manufacture comprising computer readable medium having recorded thereon a nucleotide sequence of the present invention. As used herein, "recorded" refers to a process for storing information on computer readable medium. A skilled artisan can readily adopt any of the presently known methods for recording information on computer

5   readable medium to generate manufactures comprising the nucleotide sequence information of the present invention.

A variety of data storage structures are available to a skilled artisan for creating a computer readable medium having recorded thereon a nucleotide sequence of the present invention. The choice of the data storage structure will generally be based on the means

10   chosen to access the stored information. In addition, a variety of data processor programs and formats can be used to store the nucleotide sequence information of the present invention on computer readable medium. The sequence information can be represented in a word processing text file, formatted in commercially-available software such as WordPerfect and Microsoft Word, or represented in the form of an ASCII file, stored in a

15   database application, such as DB2, Sybase, Oracle, or the like. A skilled artisan can readily adapt any number of data processor structuring formats (e.g. text file or database) in order to obtain computer readable medium having recorded thereon the nucleotide sequence information of the present invention.

By providing any of the nucleotide sequences SEQ ID NO:1-739 or a

20   representative fragment thereof; or a nucleotide sequence at least 95% identical to any of the nucleotide sequences of SEQ ID NO:1-739 in computer readable form, a skilled artisan can routinely access the sequence information for a variety of purposes. Computer software is publicly available which allows a skilled artisan to access sequence information provided in a computer readable medium. The examples which follow

25   demonstrate how software which implements the BLAST (Altschul et al., J. Mol. Biol. 215:403-410 (1990)) and BLAZE (Brutlag et al., Comp. Chem. 17:203-207 (1993)) search algorithms on a Sybase system is used to identify open reading frames (ORFs) within a nucleic acid sequence. Such ORFs may be protein encoding fragments and may be useful in producing commercially important proteins such as enzymes used in

30   fermentation reactions and in the production of commercially useful metabolites.

As used herein, "a computer-based system" refers to the hardware means, software means, and data storage means used to analyze the nucleotide sequence information of the present invention. The minimum hardware means of the computer-based systems of the present invention comprises a central processing unit

5   (CPU), input means, output means, and data storage means. A skilled artisan can readily appreciate that any one of the currently available computer-based systems are suitable for use in the present invention. As stated above, the computer-based systems of the present invention comprise a data storage means having stored therein a nucleotide sequence of the present invention and the necessary hardware means and software means for

10   supporting and implementing a search means. As used herein, "data storage means" refers to memory which can store nucleotide sequence information of the present invention, or a memory access means which can access manufactures having recorded thereon the nucleotide sequence information of the present invention.

As used herein, "search means" refers to one or more programs which are

15   implemented on the computer-based system to compare a target sequence or target structural motif with the sequence information stored within the data storage means. Search means are used to identify fragments or regions of a known sequence which match a particular target sequence or target motif. A variety of known algorithms are disclosed publicly and a variety of commercially available software for conducting search

20   means are and can be used in the computer-based systems of the present invention. Examples of such software includes, but is not limited to, Smith-Waterman, MacPattern (EMBL), BLASTN and BLASTA (NPOLYPEPTIDEIA). A skilled artisan can readily recognize that any one of the available algorithms or implementing software packages for conducting homology searches can be adapted for use in the present computer-based

25   systems. As used herein, a "target sequence" can be any nucleic acid or amino acid sequence of six or more nucleotides or two or more amino acids. A skilled artisan can readily recognize that the longer a target sequence is, the less likely a target sequence will be present as a random occurrence in the database. The most preferred sequence length of a target sequence is from about 10 to 300 amino acids, more preferably from about 30

30   to 100 nucleotide residues. However, it is well recognized that searches for

commercially important fragments, such as sequence fragments involved in gene expression and protein processing, may be of shorter length.

As used herein, "a target structural motif," or "target motif," refers to any rationally selected sequence or combination of sequences in which the sequence(s) are

5   chosen based on a three-dimensional configuration which is formed upon the folding of the target motif. There are a variety of target motifs known in the art. Protein target motifs include, but are not limited to, enzyme active sites and signal sequences. Nucleic acid target motifs include, but are not limited to, promoter sequences, hairpin structures and inducible expression elements (protein binding sequences).

10

4.15 TRIPLE HELIX FORMATION

In addition, the fragments of the present invention, as broadly described, can be used to control gene expression through triple helix formation or antisense DNA or RNA, both of which methods are based on the binding of a polynucleotide sequence to DNA or

15   RNA. Polynucleotides suitable for use in these methods are preferably 20 to 40 bases in length and are designed to be complementary to a region of the gene involved in transcription (triple helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 15241:456 (1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense - Olmno, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as

20   Antisense Inhibitors of Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally results in a shut-off of RNA transcription from DNA, while antisense RNA hybridization blocks translation of an mRNA molecule into polypeptide. Both techniques have been demonstrated to be effective in model systems. Information contained in the sequences of the present invention is necessary for the design of an

25   antisense or triple helix oligonucleotide.

4.16 DIAGNOSTIC ASSAYS AND KITS

The present invention further provides methods to identify the presence or expression of one of the ORFs of the present invention, or homolog thereof, in a test

30   sample, using a nucleic acid probe or antibodies of the present invention, optionally conjugated or otherwise associated with a suitable label.

In general, methods for detecting a polynucleotide of the invention can comprise contacting a sample with a compound that binds to and forms a complex with the polynucleotide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polynucleotide of the invention is detected in the sample.

5   Such methods can also comprise contacting a sample under stringent hybridization conditions with nucleic acid primers that anneal to a polynucleotide of the invention under such conditions, and amplifying annealed polynucleotides, so that if a polynucleotide is amplified, a polynucleotide of the invention is detected in the sample.

In general, methods for detecting a polypeptide of the invention can comprise

10   contacting a sample with a compound that binds to and forms a complex with the polypeptide for a period sufficient to form the complex, and detecting the complex, so that if a complex is detected, a polypeptide of the invention is detected in the sample.

In detail, such methods comprise incubating a test sample with one or more of the antibodies or one or more of the nucleic acid probes of the present invention and assaying

15   for binding of the nucleic acid probes or antibodies to components within the test sample.

Conditions for incubating a nucleic acid probe or antibody with a test sample vary. Incubation conditions depend on the format employed in the assay, the detection methods employed, and the type and nature of the nucleic acid probe or antibody used in the assay. One skilled in the art will recognize that any one of the commonly available

20   hybridization, amplification or immunological assay formats can readily be adapted to employ the nucleic acid probes or antibodies of the present invention. Examples of such assays can be found in Chard, T., An Introduction to Radioimmunoassay and Related Techniques, Elsevier Science Publishers, Amsterdam, The Netherlands (1986); Bullock, G.R. et al., Techniques in Immunocytochemistry, Academic Press, Orlando, FL Vol. 1

25   (1982), Vol. 2 (1983), Vol. 3 (1985); Tijssen, P., Practice and Theory of immunoassays: Laboratory Techniques in Biochemistry and Molecular Biology, Elsevier Science Publishers, Amsterdam, The Netherlands (1985). The test samples of the present invention include cells, protein or membrane extracts of cells, or biological fluids such as sputum, blood, serum, plasma, or urine. The test sample used in the above-described

30   method will vary based on the assay format, nature of the detection method and the tissues, cells or extracts used as the sample to be assayed. Methods for preparing protein

extracts or membrane extracts of cells are well known in the art and can be readily be
adapted in order to obtain a sample which is compatible with the system utilized.

In another embodiment of the present invention, kits are provided which contain
the necessary reagents to carry out the assays of the present invention. Specifically, the
invention provides a compartment kit to receive, in close confinement, one or more
containers which comprises: (a) a first container comprising one of the probes or
antibodies of the present invention; and (b) one or more other containers comprising one
or more of the following: wash reagents, reagents capable of detecting presence of a
bound probe or antibody.

In detail, a compartment kit includes any kit in which reagents are contained in
separate containers. Such containers include small glass containers, plastic containers or
strips of plastic or paper. Such containers allows one to efficiently transfer reagents from
one compartment to another compartment such that the samples and reagents are not
cross-contaminated, and the agents or solutions of each container can be added in a
quantitative fashion from one compartment to another. Such containers will include a
container which will accept the test sample, a container which contains the antibodies
used in the assay, containers which contain wash reagents (such as phosphate buffered
saline, Tris-buffers, etc.), and containers which contain the reagents used to detect the
bound antibody or probe. Types of detection reagents include labeled nucleic acid probes,
labeled secondary antibodies, or in the alternative, if the primary antibody is labeled, the
enzymatic, or antibody binding reagents which are capable of reacting with the labeled
antibody. One skilled in the art will readily recognize that the disclosed probes and
antibodies of the present invention can be readily incorporated into one of the established
kit formats which are well known in the art.

4.17 MEDICAL IMAGING

The novel polypeptides and binding partners of the invention are useful in
medical imaging of sites expressing the molecules of the invention (e.g., where the
polypeptide of the invention is involved in the immune response, for imaging sites of
inflammation or infection). See, e.g., Kunkel et al., U.S. Pat. NO. 5,413,778. Such
methods involve chemical attachment of a labeling or imaging agent, administration of

the labeled polypeptide to a subject in a pharmaceutically acceptable carrier, and imaging

the labeled polypeptide *in vivo* at the target site.

4.18 SCREENING ASSAYS

5   Using the isolated proteins and polynucleotides of the invention, the present

invention further provides methods of obtaining and identifying agents which bind to a

polypeptide encoded by an ORF corresponding to any of the nucleotide sequences set

forth in SEQ ID NO:1-739, or bind to a specific domain of the polypeptide encoded by

the nucleic acid. In detail, said method comprises the steps of:

10   (a)   contacting an agent with an isolated protein encoded by an ORF of the

present invention, or nucleic acid of the invention; and

           (b)   determining whether the agent binds to said protein or said nucleic acid.

           In general, therefore, such methods for identifying compounds that bind to a

polynucleotide of the invention can comprise contacting a compound with a

15   polynucleotide of the invention for a time sufficient to form a polynucleotide/compound

complex, and detecting the complex, so that if a polynucleotide/compound complex is

detected, a compound that binds to a polynucleotide of the invention is identified.

           Likewise, in general, therefore, such methods for identifying compounds that bind

to a polypeptide of the invention can comprise contacting a compound with a polypeptide

20   of the invention for a time sufficient to form a polypeptide/compound complex, and

detecting the complex, so that if a polypeptide/compound complex is detected, a

compound that binds to a polynucleotide of the invention is identified.

           Methods for identifying compounds that bind to a polypeptide of the invention

can also comprise contacting a compound with a polypeptide of the invention in a cell for

25   a time sufficient to form a polypeptide/compound complex, wherein the complex drives

expression of a receptor gene sequence in the cell, and detecting the complex by

detecting reporter gene sequence expression, so that if a polypeptide/compound complex

is detected, a compound that binds a polypeptide of the invention is identified.

           Compounds identified via such methods can include compounds which modulate

30   the activity of a polypeptide of the invention (that is, increase or decrease its activity,

relative to activity observed in the absence of the compound). Alternatively, compounds

identified via such methods can include compounds which modulate the expression of a polynucleotide of the invention (that is, increase or decrease expression relative to expression levels observed in the absence of the compound). Compounds, such as compounds identified via the methods of the invention, can be tested using standard

5　assays well known to those of skill in the art for their ability to modulate activity/expression.

The agents screened in the above assay can be, but are not limited to, peptides, carbohydrates, vitamin derivatives, or other pharmaceutical agents. The agents can be selected and screened at random or rationally selected or designed using protein modeling

10　techniques.

For random screening, agents such as peptides, carbohydrates, pharmaceutical agents and the like are selected at random and are assayed for their ability to bind to the protein encoded by the ORF of the present invention. Alternatively, agents may be rationally selected or designed. As used herein, an agent is said to be "rationally selected

15　or designed" when the agent is chosen based on the configuration of the particular protein. For example, one skilled in the art can readily adapt currently available procedures to generate peptides, pharmaceutical agents and the like, capable of binding to a specific peptide sequence, in order to generate rationally designed antipeptide peptides, for example see Hurby et al., Application of Synthetic Peptides: Antisense Peptides," In

20　Synthetic Peptides, A User's Guide, W.H. Freeman, NY (1992), pp. 289-307, and Kaspczak et al., Biochemistry 28:9230-8 (1989), or pharmaceutical agents, or the like.

In addition to the foregoing, one class of agents of the present invention, as broadly described, can be used to control gene expression through binding to one of the ORFs or EMFs of the present invention. As described above, such agents can be

25　randomly screened or rationally designed/selected. Targeting the ORF or EMF allows a skilled artisan to design sequence specific or element specific agents, modulating the expression of either a single ORF or multiple ORFs which rely on the same EMF for expression control. One class of DNA binding agents are agents which contain base residues which hybridize or form a triple helix formation by binding to DNA or RNA.

30　Such agents can be based on the classic phosphodiester, ribonucleic acid backbone, or

can be a variety of sulfhydryl or polymeric derivatives which have base attachment
capacity.

Agents suitable for use in these methods preferably contain 20 to 40 bases and are
designed to be complementary to a region of the gene involved in transcription (triple
helix - see Lee et al., Nucl. Acids Res. 6:3073 (1979); Cooney et al., Science 241:456
(1988); and Dervan et al., Science 251:1360 (1991)) or to the mRNA itself (antisense -
Okano, J. Neurochem. 56:560 (1991); Oligodeoxynucleotides as Antisense Inhibitors of
Gene Expression, CRC Press, Boca Raton, FL (1988)). Triple helix-formation optimally
results in a shut-off of RNA transcription from DNA, while antisense RNA hybridization
blocks translation of an mRNA molecule into polypeptide. Both techniques have been
demonstrated to be effective in model systems. Information contained in the sequences
of the present invention is necessary for the design of an antisense or triple helix
oligonucleotide and other DNA binding agents.

Agents which bind to a protein encoded by one of the ORFs of the present
invention can be used as a diagnostic agent. Agents which bind to a protein encoded by
one of the ORFs of the present invention can be formulated using known techniques to
generate a pharmaceutical composition.

4.19 USE OF NUCLEIC ACIDS AS PROBES

Another aspect of the subject invention is to provide for polypeptide-specific
nucleic acid hybridization probes capable of hybridizing with naturally occurring
nucleotide sequences. The hybridization probes of the subject invention may be derived
from any of the nucleotide sequences SEQ ID NO:1-739. Because the corresponding
gene is only expressed in a limited number of tissues, a hybridization probe derived from
of any of the nucleotide sequences SEQ ID NO:1-739 can be used as an indicator of the
presence of RNA of cell type of such a tissue in a sample.

Any suitable hybridization technique can be employed, such as, for example, in
situ hybridization. PCR as described in US Patents Nos. 4,683,195 and 4,965,188
provides additional uses for oligonucleotides based upon the nucleotide sequences. Such
probes used in PCR may be of recombinant origin, may be chemically synthesized, or a
mixture of both. The probe will comprise a discrete nucleotide sequence for the detection

of identical sequences or a degenerate pool of possible sequences for identification of closely related genomic sequences.

Other means for producing specific hybridization probes for nucleic acids include the cloning of nucleic acid sequences into vectors for the production of mRNA probes.

5   Such vectors are known in the art and are commercially available and may be used to synthesize RNA probes *in vitro* by means of the addition of the appropriate RNA polymerase as T7 or SP6 RNA polymerase and the appropriate radioactively labeled nucleotides. The nucleotide sequences may be used to construct hybridization probes for mapping their respective genomic sequences. The nucleotide sequence provided herein

10 may be mapped to a chromosome or specific regions of a chromosome using well known genetic and/or chromosomal mapping techniques. These techniques include in situ hybridization, linkage analysis against known chromosomal markers, hybridization screening with libraries or flow-sorted chromosomal preparations specific to known chromosomes, and the like. The technique of fluorescent in situ hybridization of

15 chromosome spreads has been described, among other places, in Verma et al (1988) Human Chromosomes: A Manual of Basic Techniques, Pergamon Press, New York NY.

Fluorescent *in situ* hybridization of chromosomal preparations and other physical chromosome mapping techniques may be correlated with additional genetic map data. Examples of genetic map data can be found in the 1994 Genome Issue of Science

20 (265:1981f). Correlation between the location of a nucleic acid on a physical chromosomal map and a specific disease (or predisposition to a specific disease) may help delimit the region of DNA associated with that genetic disease. The nucleotide sequences of the subject invention may be used to detect differences in gene sequences between normal, carrier or affected individuals.

25   **4.20   PREPARATION OF SUPPORT BOUND OLIGONUCLEOTIDES**

Oligonucleotides, i.e., small nucleic acid segments, may be readily prepared by, for example, directly synthesizing the oligonucleotide by chemical means, as is commonly practiced using an automated oligonucleotide synthesizer.

Support bound oligonucleotides may be prepared by any of the methods known to

30 those of skill in the art using any suitable support such as glass, polystyrene or Teflon. One strategy is to precisely spot oligonucleotides synthesized by standard synthesizers.

Immobilization can be achieved using passive adsorption (Inouye & Hondo, (1990) J. Clin.
Microbiol. 28(6) 1469-72); using UV light (Nagata et al., 1985; Dahlen et al., 1987;
Morrissey & Collins, (1989) Mol. Cell Probes 3(2) 189-207) or by covalent binding of base
modified DNA (Keller et al., 1988; 1989); all references being specifically incorporated
5   herein.

Another strategy that may be employed is the use of the strong biotin-streptavidin
interaction as a linker. For example, Broude et al. (1994) Proc. Natl. Acad. Sci. USA 91(8)
3072-6, describe the use of biotinylated probes, although these are duplex probes, that are
immobilized on streptavidin-coated magnetic beads. Streptavidin-coated beads may be
10   purchased from Dynal, Oslo. Of course, this same linking chemistry is applicable to coating
any surface with streptavidin. Biotinylated probes may be purchased from various sources,
such as, e.g., Operon Technologies (Alameda, CA).

Nunc Laboratories (Naperville, IL) is also selling suitable material that could be
used. Nunc Laboratories have developed a method by which DNA can be covalently bound
15   to the microwell surface termed Covalink NH. CovaLink NH is a polystyrene surface
grafted with secondary amino groups (>NH) that serve as bridge-heads for further covalent
coupling. CovaLink Modules may be purchased from Nunc Laboratories. DNA molecules
may be bound to CovaLink exclusively at the 5'-end by a phosphoramidate bond, allowing
immobilization of more than 1 pmol of DNA (Rasmussen et al., (1991) Anal. Biochem.
20   198(1) 138-42).

The use of CovaLink NH strips for covalent binding of DNA molecules at the 5'-end
has been described (Rasmussen et al., (1991). In this technology, a phosphoramidate bond
is employed (Chu et al., (1983) Nucleic Acids Res. 11(8) 6513-29). This is beneficial as
immobilization using only a single covalent bond is preferred. The phosphoramidate bond
25   joins the DNA to the CovaLink NH secondary amino groups that are positioned at the end
of spacer arms covalently grafted onto the polystyrene surface through a 2 nm long spacer
arm. To link an oligonucleotide to CovaLink NH via an phosphoramidate bond, the
oligonucleotide terminus must have a 5'-end phosphate group. It is, perhaps, even possible
for biotin to be covalently bound to CovaLink and then streptavidin used to bind the probes.
30   More specifically, the linkage method includes dissolving DNA in water (7.5 ng/ul)
and denaturing for 10 min. at 95°C and cooling on ice for 10 min. Ice-cold 0.1 M

1-methylimidazole, pH 7.0 (1-MeIm$_7$), is then added to a final concentration of 10 mM 1-MeIm$_7$. A ss DNA solution is then dispensed into CovaLink NH strips (75 ul/well) standing on ice.

5   Carbodiimide 0.2 M 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC), dissolved in 10 mM 1-MeIm$_7$, is made fresh and 25 ul added per well. The strips are incubated for 5 hours at 50°C. After incubation the strips are washed using, e.g., Nunc-Immuno Wash; first the wells are washed 3 times, then they are soaked with washing solution for 5 min., and finally they are washed 3 times (where in the washing solution is 0.4 N NaOH, 0.25% SDS heated to 50°C).

10 .   It is contemplated that a further suitable method for use with the present invention is that described in PCT Patent Application WO 90/03382 (Southern & Maskos), incorporated herein by reference. This method of preparing an oligonucleotide bound to a support involves attaching a nucleoside 3'-reagent through the phosphate group by a covalent phosphodiester link to aliphatic hydroxyl groups carried by the support. The

15   oligonucleotide is then synthesized on the supported nucleoside and protecting groups removed from the synthetic oligonucleotide chain under standard conditions that do not cleave the oligonucleotide from the support. Suitable reagents include nucleoside phosphoramidite and nucleoside hydrogen phosphorate.

       An on-chip strategy for the preparation of DNA probe for the preparation of DNA

20   probe arrays may be employed. For example, addressable laser-activated photodeprotection may be employed in the chemical synthesis of oligonucleotides directly on a glass surface, as described by Fodor *et al.* (1991) Science 251 (4995) 767-73, incorporated herein by reference. Probes may also be immobilized on nylon supports as described by Van Ness *et al.* (1991) Nucleic Acids Res. 19(12) 3345-50; or linked to Teflon using the method of

25   Duncan & Cavalier (1988) Anal. Biochem. 169(1) 104-8; all references being specifically incorporated herein.

       To link an oligonucleotide to a nylon support, as described by Van Ness *et al.* (1991), requires activation of the nylon surface via alkylation and selective activation of the 5'-amine of oligonucleotides with cyanuric chloride.

30   One particular way to prepare support bound oligonucleotides is to utilize the light-generated synthesis described by Pease *et al.*, (1994) PNAS USA 91(11) 5022-6,

incorporated herein by reference). These authors used current photolithographic techniques

to generate arrays of immobilized oligonucleotide probes (DNA chips). These methods, in

which light is used to direct the synthesis of oligonucleotide probes in high-density,

miniaturized arrays, utilize photolabile 5'-protected N-acyl-deoxynucleoside

5   phosphoramidites, surface linker chemistry and versatile combinatorial synthesis strategies.

A matrix of 256 spatially defined oligonucleotide probes may be generated in this manner.

4.21   PREPARATION OF NUCLEIC ACID FRAGMENTS

The nucleic acids may be obtained from any appropriate source, such as cDNAs,

genomic DNA, chromosomal DNA, microdissected chromosome bands, cosmid or YAC

10   inserts, and RNA, including mRNA without any amplification steps. For example,

Sambrook et al. (1989) describes three protocols for the isolation of high molecular weight

DNA from mammalian cells (p. 9.14-9.23).

DNA fragments may be prepared as clones in M13, plasmid or lambda vectors

and/or prepared directly from genomic DNA or cDNA by PCR or other amplification

15   methods. Samples may be prepared or dispensed in multiwell plates. About 100-1000 ng of

DNA samples may be prepared in 2-500 ml of final volume.

The nucleic acids would then be fragmented by any of the methods known to those

of skill in the art including, for example, using restriction enzymes as described at 9.24-9.28

of Sambrook et al. (1989), shearing by ultrasound and NaOH treatment.

20   Low pressure shearing is also appropriate, as described by Schriefer et al. (1990)

Nucleic Acids Res. 18(24) 7455-6, incorporated herein by reference). In this method, DNA

samples are passed through a small French pressure cell at a variety of low to intermediate

pressures. A lever device allows controlled application of low to intermediate pressures to

the cell. The results of these studies indicate that low-pressure shearing is a useful

25   alternative to sonic and enzymatic DNA fragmentation methods.

One particularly suitable way for fragmenting DNA is contemplated to be that using

the two base recognition endonuclease, CviJI, described by Fitzgerald et al. (1992) Nucleic

Acids Res. 20(14) 3753-62. These authors described an approach for the rapid

fragmentation and fractionation of DNA into particular sizes that they contemplated to be

30   suitable for shotgun cloning and sequencing.

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The restriction endonuclease *Cvi*JI normally cleaves the recognition sequence PuGCPy between the G and C to leave blunt ends. Atypical reaction conditions, which alter the specificity of this enzyme (*Cvi*JI**), yield a quasi-random distribution of DNA fragments form the small molecule pUC19 (2688 base pairs). Fitzgerald *et al.* (1992)

5   quantitatively evaluated the randomness of this fragmentation strategy, using a *Cvi*JI** digest of pUC19 that was size fractionated by a rapid gel filtration method and directly ligated, without end repair, to a lac Z minus M13 cloning vector. Sequence analysis of 76 clones showed that *Cvi*JI** restricts pyGCPy and PuGCPu, in addition to PuGCPy sites, and that new sequence data is accumulated at a rate consistent with random fragmentation.

10   As reported in the literature, advantages of this approach compared to sonication and agarose gel fractionation include: smaller amounts of DNA are required (0.2-0.5 ug instead of 2-5 ug); and fewer steps are involved (no preligation, end repair, chemical extraction, or agarose gel electrophoresis and elution are needed

Irrespective of the manner in which the nucleic acid fragments are obtained or

15   prepared, it is important to denature the DNA to give single stranded pieces available for hybridization. This is achieved by incubating the DNA solution for 2-5 minutes at 80-90°C. The solution is then cooled quickly to 2°C to prevent renaturation of the DNA fragments before they are contacted with the chip. Phosphate groups must also be removed from genomic DNA by methods known in the art.

20   **4.22   PREPARATION OF DNA ARRAYS**

Arrays may be prepared by spotting DNA samples on a support such as a nylon membrane. Spotting may be performed by using arrays of metal pins (the positions of which correspond to an array of wells in a microtiter plate) to repeated by transfer of about 20 nl of a DNA solution to a nylon membrane. By offset printing, a density of dots higher than the

25   density of the wells is achieved. One to 25 dots may be accommodated in 1 mm^2, depending on the type of label used. By avoiding spotting in some preselected number of rows and columns, separate subsets (subarrays) may be formed. Samples in one subarray may be the same genomic segment of DNA (or the same gene) from different individuals, or may be different, overlapped genomic clones. Each of the subarrays may represent replica

30   spotting of the same samples. In one example, a selected gene segment may be amplified from 64 patients. For each patient, the amplified gene segment may be in one 96-well plate

(all 96 wells containing the same sample). A plate for each of the 64 patients is prepared. By using a 96-pin device, all samples may be spotted on one 8 x 12 cm membrane. Subarrays may contain 64 samples, one from each patient. Where the 96 subarrays are identical, the dot span may be 1 mm^2 and there may be a 1 mm space between subarrays.

5   Another approach is to use membranes or plates (available from NUNC, Naperville, Illinois) which may be partitioned by physical spacers e.g. a plastic grid molded over the membrane, the grid being similar to the sort of membrane applied to the bottom of multiwell plates, or hydrophobic strips. A fixed physical spacer is not preferred for imaging by exposure to flat phosphor-storage screens or x-ray films.

10   The present invention is illustrated in the following examples. Upon consideration of the present disclosure, one of skill in the art will appreciate that many other embodiments and variations may be made in the scope of the present invention. Accordingly, it is intended that the broader aspects of the present invention not be limited to the disclosure of the following examples. The present invention is not to be limited in scope by the

15   exemplified embodiments which are intended as illustrations of single aspects of the invention, and compositions and methods which are functionally equivalent are within the scope of the invention. Indeed, numerous modifications and variations in the practice of the invention are expected to occur to those skilled in the art upon consideration of the present preferred embodiments. Consequently, the only limitations which should be placed upon

20   the scope of the invention are those which appear in the appended claims.

All references cited within the body of the instant specification are hereby incorporated by reference in their entirety.

5.0   EXAMPLES

5.1   EXAMPLE 1

25   <u>Novel Nucleic Acid Sequences Obtained From Various Libraries</u>

A plurality of novel nucleic acids were obtained from cDNA libraries prepared from various human tissues and in some cases isolated from a genomic library derived from human chromosome using standard PCR, SBH sequence signature analysis and Sanger sequencing techniques. The inserts of the library were amplified with PCR using primers

30   specific for the vector sequences which flank the inserts. Clones from cDNA libraries were

spotted on nylon membrane filters and screened with oligonucleotide probes (e.g., 7-mers) to obtain signature sequences. The clones were clustered into groups of similar or identical sequences. Representative clones were selected for sequencing.

5   In some cases, the 5' sequence of the amplified inserts was then deduced using a typical Sanger sequencing protocol. PCR products were purified and subjected to fluorescent dye terminator cycle sequencing. Single pass gel sequencing was done using a 377 Applied Biosystems (ABI) sequencer to obtain the novel nucleic acid sequences. In some cases RACE (Random Amplification of cDNA Ends) was performed to further extend the sequence in the 5' direction.

10

5.2   EXAMPLE 2

Novel Contigs

The novel contigs of the invention were assembled from sequences that were obtained from a cDNA library by methods described in Example 1 above, and in some cases

15   sequences obtained from one or more public databases. Chromatograms were base called and assembled using a software suite from University of Washington, Seattle containing three applications designated PHRED, PHRAP, and CONSED. The sequences for the resulting nucleic acid contigs are designated as SEQ ID NO: 1-739 and are provided in the attached Sequence Listing. The contigs were assembled using an EST sequence as a seed.

20   Then a recursive algorithm was used to extend the seed EST into an extended assemblage, by pulling additional sequences from different databases (i.e., Hyseq's database containing EST sequences, dbEST version 120, gb pri 120, UniGene version 120, and Genpept 120) that belong to this assemblage. The algorithm terminated when there was no additional sequences from the above databases that would extend the assemblage. Inclusion of

25   component sequences into the assemblage was based on a BLASTN hit to the extending assemblage with BLAST score greater than 300 and percent identity greater than 95%.

The nearest neighbor result for the assembled contig was obtained by a FASTA version 3 search against Genpept release 120, using FASTXY algorithm. FASTXY is an improved version of FASTA alignment which allows in-codon frame shifts. The nearest

30   neighbor result showed the closest homologue for each assemblage from Genpept (and

contains the translated amino acid sequences for which the assemblage encodes). The

nearest neighbor results for SEQ ID NO: 1-739 are shown in Table 2.

Tables 1, 2, and 3 follow. Table 1 shows the various tissue sources of SEQ ID NO:

1-739. Table 2 shows the nearest neighbor result for the assembled contig. The nearest

5 neighbor result shows the closest homologue for each assemblage and contains the

translated amino acid sequences for which the assemblage encodes. Table 2 also shows

homologues with identifiable functions for SEQ ID NO: 1-739. The polypeptides were

predicted using a software program called FASTY (available from

http://fasta.bioch.virginia.edu) which selects a polypeptide based on a comparison of

10 translated novel polynucleotides to known polynucleotides (W.R. Pearson, Methods in

Enzymology, Vol. 183: pp. 63-98, (1990), herein incorporated by reference). Table 3 shows

the predicted amino acid sequence corresponding to the novel nucleic acid contig sequences.

Table 1 - Tissue Sources

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
adult brain	GIBCO	AB3001	28 46 54 62 95 117 134 175 188-189 324 330 337 356 369 371 378 386 389 396 432 435-436 468 472-473 476-477 483 486 518 538-539 543 545 557 565 571 573 578 582 598 613-614 619 627 632 634 639 687 709
adult brain	GIBCO	ABD003	5 12 46 52 57 66 79 91 97 134 144 148 150 162 164 172 175-176 181 186 193 250 323 325-327 330 334 338 362 367 369 371 378-379 386 388-389 392 396-397 399-401 403 416 422 435 444 449 451 454 461 463-464 468 472-473 483 486 494 506 511 513 516 520 523-524 526 529 533 536-537 539 545 548 552 556 558-559 562-563 565 567 569 573-574 576 579-580 582-584 590 593-594 598 602 606 613-614 619- 621 623-624 627 634 637 641 646 648 659 675 688-689 694 696-698 703 714 729
adult brain	Clontech	ABR001	57 162 164 227 266 316 334 356 367 385 438 468 512 524 528 557 582 590 621 627 631 634 689 714
adult brain	Clontech	ABR006	189 228 385 438 571 584 632 650 677
adult brain	Clontech	ABR008	1 3 5 11-25 31-32 46-47 55-57 59

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			61 65-67 69 75 79 91 103 108 111 113-114 126 132 150 160 162 164 171-172 186 188-189 193 202-203 206 210-212 220 222-224 227-229 233 235-236 243-247 251-252 257 264-266 268 275 313 324 328-331 334-335 338-339 343 346-347 351 355 357 359-361 365 367 370-371 378 380 382 386-389 391 396 399-400 402 406 413 419-420 423 426 432 434 437-438 442 446 448-449 459-460 465 468 470 472-473 475 481-483 487 489-490 495-497 499 501 503-504 507-509 511 520 524 526 528 532-533 536 539-540 543-546 551-552 556-557 563 565-567 569 572-573 576-577 579-580 582 584 586 590-591 593 595-597 599-602 604 610-616 620-621 624-625 627-628 632 634 637-638 641 643-644 646-647 650 653-657 660-662 668 672 675 677-678 680-681 688-689 691 693 695-696 698 706-707 709 711 713-727 729 731 733-734 736 738-739
adult brain	Clontech	ABR011	334 476 634 677
adult brain	BioChain	ABR012	379 587
adult brain	Invitrogen	ABR013	334 634
adult brain	Invitrogen	ABT004	3 19 57 62 66 75 110 122 150 160 162 167 171 176 186 197 203 211 230 232 259 328-331 334 369 382 389 394 400 406 417 426 429 442 457 472 483-484 492 511 514 529 531 534 537 540 553 558 562 572 580 582-584 590 604 611 613 615 622 637 639 643-644 648 688-689 692 695
cultured preadipo-cytes	Strategene	ADP001	16 37-39 66 109 120 141 144 193 273 316 331 333 338 389 415 429 442 444 464-465 475 489 501 511 513 531 534 539-540 545-546 557 583-584 590 596 602 607 613 615 619 622 629 632 634 643
adrenal gland	Clontech	ADR002	4-5 12 48 53 57 162 164 172 186 188 192 196 203 207 213 258 316 330-331 333 339 354 356-357 369 383 385 388 392 395 402 406 411 415 434 454-455 465 468 473 475 477 491 498 501 509 511 517 528-529 532 537-539 542 545 558 560 565 567 576-577 586 600 606 615 621 624 627 632 634 647 653 660 667 683 689 696 714

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
adult heart	GIBCO	AHR001	28 39 57 64-65 75 79 89 97-98 108 117 134 144 157 159-160 164-166 169 171 174 184 192-193 203 207 220 243 256 258 266-267 281 314 316 318 328-329 331 338-339 341 346 348 354 356-357 366-367 369 371 377-379 382 385-386 388 393 395-396 399-401 403 415 420 422 425 431-432 435-436 445 451 459 465 472-473 477 483 486 488 490 496 501 503 508 515 519-520 526 528 531 533-534 537-538 540-541 544 546 552 556-557 562-563 566-571 573 576-581 583-584 586-587 594 602 606 608 611 613-615 618 620-621 626-628 632 634 641 643 646 648 653 659 667 676 678 687 689 696 703-704 708 711 714 729-730
adult kidney	GIBCO	AKD001	3 28-29 48 56-57 67 79 84 93 106 117 134 138 140 144 156 160-164 168-170 172 177 183 188-189 192-193 199 203 207 235 251 257 275 319 321-323 328-330 337 346-347 349 354-356 360 367-369 371 375 378-381 383-386 388-389 392 396-397 399 401 404 407 409 411-412 415-416 420-422 427 432 436-437 439-440 444 451-456 458-459 464-465 468 470 472-473 477 481 483 486-487 492 496 501 503 505-506 508 511 513-516 518 524 526 529 533 535 537-541 543 545-546 548 552 557 559-560 562-563 565-569 572-574 576-577 579-587 589-591 593-594 602 604-607 613-614 617-618 620-624 627-628 630 632-635 637-638 640-642 644-645 652 662 664 667-668 677 682 685 687 689 694-696 698 703 716 723 728-729 732 734
adult kidney	Invitrogen	AKT002	92 136 154 160 164 178 271 314 347 353 360 367 376 378-379 386 391 402 409 423 432 449 451 477 490 494 503 526 528 531 534 538-539 541 545-546 559 566 579 584 588 594 602 613 621 624 632 647 652 689
adult lung	GIBCO	ALG001	56-57 67 69 98 113 134 144 164 172 191-192 270 321 328 338 369 371 374 378 380 388-389 396 405 411 416 424 443-444 456 473-474 482-483 497 508 518 529 531 534 536

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			540 552 556 559 563 568 573 579-580 585-586 588-589 593 601-602 606 612-613 618 634 662 667 685 696 702 726 729-730
lymph node	Clontech	ALN001	28 57 79 113 164 172 179 193 240 325 332 367 378-379 386 388 402 485 526 580 586 603 613-614 621-622 628 634 662 667 686 734
young liver	GIBCO	ALV001	3 24 28 54 60 117 134 137 154 160 193 196 242 273 316 328-329 334 351 354 370-371 388 392 395-396 401 406 411 415 432 435 439 448 454-455 477 483 486-487 495 506 509 514 518 523-524 526 529 531 534 537-538 540 544 548 566 568 571 573 579 587-588 591 594 602 621 641 645 686 713 723
adult liver	Invitrogen	ALV002	3 24 27 56-57 65-66 71 79 92 97 106 134 140 164 192 200 214 220 232 240 242 271-272 291 313 316 328 347 349-350 353 355 357 368-369 371-372 378-379 381-382 385 397 430 435 448 457 459 471-472 475 485 487 502 505-506 511 520 530-531 533-534 537 540-541 543 548 566 574-575 579 582 588 590 612 623 640 648-649 681 687 689 710 714
adult ovary	Invitrogen	AOV001	3 10 14 28 54 56-58 62 65-66 68 73 75 79 98 127 144 154 162 164-165 172-174 182 186 188-189 192-196 206 213 224 234-235 241 243 248 253 261 273 275 289 314 316 321-322 325-327 329-331 333-334 336-338 340 343 345-348 354-357 367 369 371-372 378 382 386 388 395-397 399-402 404 407 411 415-416 419-420 425 427 429 431 435-437 441 444 451 453-459 465 468-470 472-475 481 485 490 494 496 501 503 509-510 513 517-518 522-524 526 528-529 531-534 537-542 545-546 548 552 554 556-557 559-560 562-563 565 567-569 572-579 581-582 584-588 590-591 593-598 602-604 606 611-615 618 620-623 627 629 631-632 635-638 643 647 652-654 657 659 661-662 667 674-675 677-678 682 684 689 693 695-698 703 705-707 714 717-718 723 729 731 738
adult placenta	Clontech	APL001	172 224 239 363 371 392 437 531 534 622 690 696

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
placenta	Invitrogen	APL002	57 66 122 161 172 241 326 329 334 369 388 407 427 429 436 459 464 506 508 511 539 541 545 566 573 575 590 597 637 648 690
adult spleen	GIBCO	ASP001	28 57 65 78 93 95 117 134 156-157 172 186 188 194 214 273 314 319 331 334 338 344 354 371 374 392 436 457 471-473 478-479 481 483 515 526 528-529 541 548 557 559 563 565 569 573 585-587 603 606 613 615 618 621-622 627 632 634 637 643 654 671 689 696-698 701 712 739
testis	GIBCO	ATS001	3 67 134 160 192 235 327 329 337 342 371 375 378 380-381 396 399 415 431 436 441 451 472 477-478 483 486 494 496 503 522 524 526 531 533-534 538 541-542 546 548 557 568 573 577 579 581 584 594 596 618 641 658 662 689 700 714 729-730
adult bladder	Invitrogen	BLD001	28 57 112 161 164 172 192 194 250 334 354 370 397 404 487 513 526 531 534 545 572 599 602 620 634 651 659 672 689 713 725
bone marrow	Clontech	BMD001	10-11 28 31 54 57 62 75 78-83 88 131-133 135-137 141-143 157 159 164 171-173 176-177 187-189 192 195 200 202 205 207 218 225 282 314-318 325 330 334-335 337 346-348 367 369 372 378 383 386 388 395 401 405 412-413 416 422 436 442-443 447 449 455 465 472 475 477 503 516 523 528-529 533-534 539 545 551 556 559 563 565-567 571 573-574 576 579-586 594 601-602 606 613 620-623 628-629 634 638 642-643 646 656 659 666 686 689 691 696 698-699 703 705 714 720 726 729
bone marrow	Clontech	BMD002	2 15 23 35 49 54 57 59 78 81 114 156-157 164 171-172 189-190 202 223 240 325 334 346 357 367 379 381-382 388 397 412 454 465 482 490 509 516 526 535 537 563 566 579 595 600 638 640-641 654-655 676 689 714
adult colon	Invitrogen	CLN001	48 79 94 138 162 167 189 333 368-369 375 386 404 409 414 435-436 455 470 525 541 548 553 567 603 634 656 659 689 694 721
adult cervix	BioChain	CVX001	3 28 35 54 57 79 83 95 97 113 117 154 162 164 172 176 220 235 248-

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			249 321 327 329 333 338 346 348 354 356 362 367-368 371 374-375 378-379 386 388-389 395 401-402 404 407 420 429 431 437 443 451 459 468 475 477 479 483 485 490 493-494 496 506 508 511 517 526 528 531 534 544 550 552 559 566 569 571-573 575-576 581-583 588 590 593-594 604 606 614 622 628 631-635 639 661-662 675 689 692 695 715 718 738
endothelial cells	Strategene	EDT001	3 28 31 39 54 58 65-66 79 89 144 160 173 187 189 191 193 197-199 207 220 230 267 273 314 324 326 329-331 336 347 354 369 372 378-379 384 386 388 391-394 396-397 399 401 407 420 422 429 431-432 435-437 444 449 451 455 459 465 472 474-475 481-482 486 490 499-501 503 506 511 513 515-517 520 522-524 528 531-534 538-539 541 545-546 548 550 552 557 559-560 563 565 567 569 571 573 577 579-580 583-584 587-590 593-594 596-597 599 602 611 614-615 618 620-621 624 630 632-634 637-638 642-643 647-648 651 675 677 680 682 694 696-698 703 708 714 719 724-725 728-730 734
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM001	38 41-45 118-121 164 198 292-312
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM003	43 164 295
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM004	121 164 306 482
Genomic clones from the short arm of chromosome 8	Genomic DNA from Genetic Research	EPM006	293

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
esophagus	BioChain	ESO002	513 526
fetal brain	Clontech	FBR001	57 468 563 634
fetal brain	Clontech	FBR004	162 186 254 265 491 582
fetal brain	Clontech	FBR006	1-2 5-6 11-12 22-23 49 57 62 73 94 103 114 162 164 172 189 193 203 218 240 244 251-252 259 279 330-331 334-335 346-347 351 367 378 386 388-389 399 413 420 422 424 434 442 444 448 465 468 470 472-473 490 496 501 503-504 511 520 524 528 532-533 539 544-546 548 551 553 563 571 573 576 587 591 601 613 615-616 620-621 628 634 641 644 648 653 657 662 672-673 689 691 698 706 714 718 725-728 733 735-739
fetal brain	Clontech	FBRs03	444 587
fetal brain	Invitrogen	FBT002	17 66 157 162 164 186 190 193 250 270 324 331 334-335 338 346 354-355 374 382 389-390 426 429-430 437 442 453 467 471 475 481 485 491 507-508 513-514 526 528 532 540 544 548 550 552-553 557-558 563 565-566 590 593 602 612 615 637 641 648 654 662 672 676 692 703
fetal heart	Invitrogen	FHR001	57 75 164 547
fetal kidney	Clontech	FKD001	57 164 172 179 188 194 208 218 230 240 250 330 334 369 388 401 413 439 454 465 529 546 550 573 576 581 583 594-596 602 634 648 667 676 689 698 706
fetal kidney	Clontech	FKD002	2 560
fetal kidney	Invitrogen	FKD007	565 596-597
fetal lung	Clontech	FLG001	75 164 355 386 428 455 513 524 528 631 689
fetal lung	Invitrogen	FLG003	30 157 162 169 188 243 253 256 283 330 392 400-401 404 407 424 428 435-436 479 506 508 520 530-531 534 572 578 584 602 611 613 631 654 658 662 676 689 701 716
fetal lung	Clontech	FLG004	371
fetal liver-spleen	Columbia University	FLS001	2-3 5 26 29 31 35 48 54-58 60 62 65 67 70 74-77 79-80 84-87 89 92 96 98-100 104 117 122-130 138 140 144-158 160 162 164 172-173 185-186 188-189 192-194 196 199-200 207 214 218-219 237-238 241 269 273 280 282 314-316 318-322 324 327 329-331 334-335 337 340 345 348-350 354-358 363-364 367-371

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Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			373 375 377-380 382-383 385-386 388 394-396 399 402 409 411-412 418 420-422 424 427 431 435-437 440 442 448-451 453 455 459 461 464-465 470 472-473 475 477-478 480-485 488-490 501 503 505-506 509 511-513 515-518 520 522-524 526-534 538-539 541 543-547 549-550 552-553 556-557 559-564 566-567 569 571 573 576 578-580 582-587 589 591-594 596-597 599-600 602 611-615 618 620-625 627-628 631-636 638 641-642 646 648 651 659-660 662-664 667-668 675-678 680-681 684 689-690 696-698 709 714 723 738
fetal liver-spleen	Columbia University	FLS002	15 31-32 39-40 47-49 52 56 60 65 69 72 75 78 84 97-98 100 104 115 123 138 140 144 146 152-153 157 161 164 172-173 182 188 194 196 199 220 241-242 246 249 253 255 266 273-275 280-281 288-291 314-316 318-319 321-322 324 329-331 336-339 343 347-350 353-354 357-358 363 367 369-370 372 374 378-380 382-383 386 388-389 393-397 399 405 407 409-410 412 421 424 432 435 439 448 450-451 453-457 459 461 464-465 470 472-475 477 479-481 483 485 488 490 497 501 503 506 509 511-513 516-518 520 524 527-528 531-532 534 539 541-546 556 559-560 565-566 569 571 574 576 579 582-586 588 590 597-599 602-604 606 615 618 620-621 623 625 627 632-634 639 641 644 648 666-668 675-676 681 684 689-690 696-697 701 703 714 719 723 734-735
fetal liver-spleen	Columbia University	FLS003	60 79 157 190 690
fetal liver	Invitrogen	FLV001	3 27 35 48 50 56-57 66 75 92 94 105 157 161 164 176 189 209 220 243 272 324 328 333 335 353 369-370 381 392 396 429-430 435 439-440 442 444 465 471 483 487 502 506 513-514 519 534-535 537 548 554 566 568 576-577 580 582 590 613 621 645 648-649 689
fetal liver	Clontech	FLV002	343
fetal muscle	Invitrogen	FMS001	51 79 97 108-110 166 194 196 266 341 352 380 389 402 407 444 464

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			475 501 513 524 546 552 554 560 570 572 598 605 628 634 649 675 703-704 714 737
fetal muscle	Invitrogen	FMS002	524
fetal skin	Invitrogen	FSK001	31 33 35 48 57 63 67 75 112-114 117 157 162 164 172 178 180 188 196 220 243 254 319 324 328 330 333-334 367 369 371 375 379-383 386 388-389 400 404 407 412 419-420 429 444 455 472-473 491 499 503 508 511 514 517 522-524 529 531 534 537 540 542 547 552 554 556-557 560 563 565 567 571-572 574 576 579 590 596 599 616 621 625 627 631-632 634 639-640 648 653-654 662 689 708 714
fetal skin	Invitrogen	FSK002	501 537
fetal spleen	BioChain	FSP001	465 729
umbilical cord	BioChain	FUC001	27-28 35 57 68 83 105 136 157 159-160 164 188 191 225 279 315-316 321 328 334 363 367 369 378-379 383 386 388-389 392 397 406-407 413 415-416 427 440 449 455 458 461 464-465 468 473-475 479 485-486 488 490 496 514 517 522 524 526 528-529 531 533-534 538 540 546 550 552 556-558 572 582 584-585 587-588 594-597 602 606 613 616 618-619 631 634 637 651 689 696 698 706 729
fetal brain	GIBCO	HFB001	3 5 22 26 46 53 66 73 94 117 134 139 164 172-173 188-189 212 215 230-231 248 251 262 288-289 316 325 329-331 334 337-338 348 352 365-367 369 371 377-379 385-386 388 392 394 396 400 403 420 422 429 437 444-446 449 451 455 459 461-463 466-468 472-473 475 477 481 483 485-486 488 490-491 496 503-504 506 513 523-524 529 532-533 539-541 545 548 550 552 557-560 563 565-566 569 571 576-577 579-580 583-584 586 590 593-594 596-599 601-602 604 606 611 613 615 618 621-623 627-628 634-635 637 641 643 647 662 664-665 667 675 677 680 689 695-697 703 726
macrophage	Invitrogen	HMP001	97 518 532 569
infant brain	Columbia University	IB2002	28 46 56-57 59 67 75 78 109 117 122 129 144 157 162 164-165 172 176 180 190 193 212 220 226 236-

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			237 251 261-262 316 318 324 328-330 334-335 337 340 354-356 361 364-365 367 369 371-373 377-380 382 385-386 389 392 395 397 400 411 416 421-422 429 432 436 438 444 448 451 456 464-465 469 471-475 484 486 496 504-506 511 520 524 526 529 531 533-534 537-540 544-546 548 553 556 558 562 565 567 576 579-580 582 584 586 589-590 593 597-598 602 613-614 618 620-621 627-628 632 634 636 641 650 654 659 662 667 683 689 721 730
infant brain	Columbia University	IB2003	46 54 75 109 156 164 220 244 251 314 324-325 331 335 340 361-362 367 369 377-379 400 408 438 442 456 460 464 469 472 496 506 523-524 526 529 538 540 544-545 547 558 560-562 565 567 569 579 584 598 602 613 615 621 627 632 634 637 639 650 738
infant brain	Columbia University	IBM002	262 340 432 436 438 472 531 534 569 613 634
infant brain	Columbia University	IBS001	162 231 283 331 369 385 438 444 472 506 513 523 531 534 580 615 636 689
lung, fibroblast	Strategene	LFB001	28 54 57 65 172 188 233 321 331 340 347 367 369 378-379 388 401 451 459 475 479 503 511 522 524 532 534 559-560 573 580 583 587 597 615 632 634 638 686 689 708
lung tumor	Invitrogen	LGT002	3 7 21 24 26 28 31 54 56-57 62-63 66 92-93 101 109 112 162 164 171-172 176 183 188-189 192-193 196 201-202 223 230 235 259 273-274 316 321 329-331 333-334 338 345 347-348 356 367 369 371-372 378-379 381-382 386 388-390 396 399-404 406 409 416 424-425 427 429 432 436-437 439 451 455-456 459 464-465 467 473 475 484-486 490 499 502-503 506 508 511 513-514 517-518 522 524 526 528 531-532 534-535 538-539 541 543-546 553 557-559 563 567-568 571 573 575-576 579-580 585-588 590-591 593-594 598 601-604 609 611-613 615 621 627-628 631-632 636-637 645 648 651-652 654 662 667 672 677 681 683 689 698 701-702 714 718 724 726 729 734
lymphocytes	ATCC	LPC001	4 31-32 35 57 65-66 70 110 116 156

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Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			162 164 230 243 250 282 287 326 328-330 334 336 346-347 359 378 386 388 397 407 414 416 419 472 497 520 525 539 545 549 551 582 590 606 615 618 621 631 634 686 692 698 701 714
leukocyte	GIBCO	LUC001	4 7 9-11 23 28 31 35 39 54 65 75-76 79 90 97 110 117 134 152 157 159 162 164-167 171 173 176 188 193 199 204 207 220 244 253 255 314 316 318 321 324 326 329-330 337-339 346-347 352 354 356 367 369 371 378-379 382 388-389 392 396-397 400-402 405 415-416 420 422 429 432 435-436 443-444 449 454-455 457-459 465 479 481-486 491 497 501 503-504 506 508 511 514 516 520 523-525 529 532-533 535 538-539 545 548 552-554 556 559-560 562-563 565-566 569 571-573 576 579 581 585-587 590 593-594 598 600-602 604 606-609 613-614 618 620-622 624 627 630 632-634 636 638 643 645 660-662 667 678 682 684 686 689 691 693 696-698 714 726
leukocyte	Clontech	LUC003	11 54 97 152 164 330 479 546 564-565 593 613 627 634 646 696 729
melanoma from cell line ATCC #CRL 1424	Clontech	MEL004	2 57 67 79 164 171-173 188 193 196 232 321 337 341 346 367 379-380 388 407 427 454 472 477 482 501 520 539 545 552 556 579 588 593 598 611 621 631 648 665 714 730
mammary gland	Invitrogen	MMG001	3 20-21 29 31 54 56-57 63-66 79 94 109 112-113 117 122 125 138 141 154 160 162 164 172 176 186 189 192 204 214 220-221 232 238 251 255 257 273 276-278 324 326 328-331 333 335 337 341-343 347 354-355 357 367-371 374-375 379 382-386 388-392 397 399-400 404 406-408 410-411 425 431 435-436 444 451 455 457 459 461 464-465 470-471 475 479 483 485 487-488 491 501 506-508 511 513-519 523-524 526 529 531-532 534-535 537 539-540 542-545 552-554 557-560 563 566 569 572 577 580 584 587-588 590 597-598 602 604-605 609 611 613 615 624 627 631-634 637 639-640 643 648-649 654 664 669-670 672-673 676-679 681 689 691-695 697-698 706 714 731 734 737

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
induced neuron cells	Strategene	NTD001	36 57 164 284 388 397 420 481 485 501 524 528-529 539 542 545 560 571 579 582 595 602 620 637 654 667 689 730
retinoid acid induced neuronal cells	Strategene	NTR001	524 584 693
neuronal cells	Strategene	NTU001	36-38 120 204 331 351 354 357 386 388 399 411 442 459 516 533 539 545 565 586 606 615 621 637-638 642 646 648 714 730
placenta	Clontech	PLA003	503 579 690
prostate	Clontech	PRT001	15 40 65 164 187 207 229 337 348 367 375 377-378 395 406 416 428 458 468 476 511 524 526 531 534 538 555 559 563 576 584 597 613 622 624 631 642 667 672 677 684 724 734
rectum	Invitrogen	REC001	57 67 164 260 331 343 370-371 380 382 384 404 409 436 444 475 485 498 513 524 526 540 542 552 554 581 615 619 624 627 634 654 659 671 689 714
salivary gland	Clontech	SAL001	21 84 106-107 152 179 238 246 255 273 287 371 378 383 401 407 420 455 475 477 509 512 515 521 541 548 565 570-571 573-574 589 606 628 634 636 652 689 703 738
skin fibroblast	ATCC	SFB002	192
skin fibroblast	ATCC	SFB003	464
small intestine	Clontech	SIN001	57 66 71 98 116 150 164 172 327 336 343 362 367 379 388 397 401-402 417 429 433 436 496 526 528 533 590 602 620 631 634 667 678 711
skeletal muscle	Clontech	SKM001	3 57 66 101 164 172 256 266 325 379 385 449 468 485 487 518 552 554 566-567 570 582 584 590 606 611 628 631 738
spinal cord	Clontech	SPC001	10 54 57 66 75 100 102 114 144 164 175 193 199 215-216 325 334 337 367 370 380 385-386 406 411-413 419 429 466 470 486 518 526 529 531 534 574 579 585 587 590 604 620-621 631-632 634 642 644 648 659 688-689 691 693 695
adult spleen	Clontech	SPLc01	478 572
stomach	Clontech	STO001	26 90 164 218 358 369 386 468 475

Tissue Origin	RNA Source	Hyseq Library Name	SEQ ID NOS:
			485 526 532 569 576 579 581 586 603 631 634 677 682 689
thalamus	Clontech	THA002	17 31 57 66 109 127 164 217-218 262 315-316 324 330 357 369 386 388 400 406 435 456 459 464 468- 469 515-516 537 540-541 556 566 574 590 611 622 631 634 644 648 656 677-678 680
thymus	Clontech	THM001	6 15 26 54 79 164 172 187 193 201 264 291 315 329 331 351 356 367 397-398 401 407 412 424 427 429 435-436 443 451 474 478 482 549 563 565 567 569 576 578 581-582 610 615 621 631-632 634 648 662 667 669 679 689 693 696
thymus	Clontech	THMc02	3-6 8 11 16 18 34 58-59 67 132 149 162 164 167 172-173 186 188-189 193 200 203 216 223 232 239 255 263 265 319-320 331 333-334 355 359 370 373 377-380 382 387-390 393 395 398-399 402 404 408 420 427 434 436 467 475-476 503 508 518 524 526 532 540 560 563 565 571-572 576-577 579 582 598 601 603 612-613 615 621 627 632 634 639 641 648 651 657 659 662 672 677-678 684-686 689 696 699 706 714-716 722 726-729 732
thyroid gland	Clontech	THR001	5 29-30 40 54 57 66 72 79 117 144 160 164 166 170 172 176 183 188- 189 208-209 219 230 285-286 314 318 327 331 335 338 344 347 354 363 367 375 377-380 382 384-386 388 393 397 399 401-403 419 422 429 436 442 444 451 456 458-461 464 467-468 470 472-473 476-477 481 488 494 503 508-509 511 516 519-521 524 528-529 533 537-538 543 548 557 559-560 563 565-566 571-574 576 582 585 587 590-591 593-594 596-597 606 614-615 620- 621 623-624 627 631-634 640 650- 651 653 662 667 669-670 675 679 689 708 712 714
trachea	Clontech	TRC001	156 164 171 240 375 378 390 400 422 468 484 565 574 581 585 587 631 654 689 714
uterus	Clontech	UTR001	65 77 79 101 164 220 367 369 451 468 526 530 533 548 554 559 562 568 573 582 594 637 648 689

Table 2 - Nearest Neighbor Results

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
1	1000	gi7021484	Mus musculus	secretory carrier membrane protein 4	567	85
2	10017	R06463	Homo sapiens	Derived protein of clone ICA13 (ATCC 40553).	848	100
3	10020	gi1065967	Caenorhabditis elegans	similar to other protein phosphatases 1, 2A and 2B	325	36
4	10024	G03460	Homo sapiens	Human secreted protein,	439	98
5	10032	Y12505	Homo sapiens	Human 5' EST secreted protein	136	87
6	10042	Y29511	Homo sapiens	Human lung tumour protein SAL-25 1st predicted amino acid sequence.	701	100
7	1006	Y92324	Homo sapiens	Human alpha-2-delta-D polypeptide from splice variant 1.	763	100
8	10064	gi4589375	Homo sapiens	Gab2	425	58
9	1007	gi7018398	Homo sapiens		151	75
10	1008	gi8960605	Homo sapiens	protein that is immuno-reactive with anti-PTH polyclonal antibodies	1226	99
11	10088	gi3779244	Homo sapiens	Metallo-protease 1	1512	98
12	10089	gi2947232	Homo sapiens	membrane associated guanylate kinase 2	523	100
13	10091	gi3347863	Mus musculus	cAMP-specific cyclic	223	54

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SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces- sion No.	Species	Description	Smith - Water man Score	% Identity
				nucleotide phosphodi- esterase PDE8; MMPDE8		
14	10098	gi69793 11	Homo sapiens	cysteine-rich repeat- containing protein S52 precursor	1068	100
15	10102	G01395	Homo sapiens	Human secreted protein,	297	88
16	10103	gi85473 3	Rattus norvegicus	casein kinase 1 gamma 1 isoform	293	84
17	10104	Y60017	Homo sapiens	Human endometrium tumour EST encoded protein 77.	154	100
18	10108	G03290	Homo sapiens	Human secreted protein,	215	97
19	10110	gi72922 99	Drosophila melanogaster	CG1271 gene product	208	46
20	10111	gi45123 34	Rattus norvegicus	Ca/calmodulin- dependent protein kinase kinase alpha, CaM-kinase kinase alpha	822	89
21	10113	Y41694	Homo sapiens	Human PRO382 protein sequence.	633	97
22	10114	gi34907 5	Rattus norvegicus	calmodulin- binding protein	531	99
23	10116	gi16298 1	Bos taurus	endozepine- related protein precursor	937	87
24	10121	gi89797 43	Canis familiaris	Band4.1-like5 protein	643	100
25	10126	Y99420	Homo sapiens	Human PRO1486 (UNQ755) amino acid sequence	607	100
26	1013	gi80475 0	Homo sapiens	protein tyrosine	614	73

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces- sion No.	Species	Description	Smith - Water man Score	% Identity
				phosphatase		
27	10136	W02105	Homo sapiens	Human L-asparaginase.	1243	98
28	10142	Y35924	Homo sapiens	Extended human secreted protein sequence,	862	89
29	10148	gi3334982	Homo sapiens	R27216_1	329	98
30	1015	G02485	Homo sapiens	Human secreted protein,	120	72
31	10154	gi10798804	Homo sapiens	sperm antigen	2607	98
32	10175	Y96864	Homo sapiens	SEQ. ID. 37 from WO0034474.	536	100
33	10196	gi553621	Homo sapiens	profilaggrin	346	39
34	10198	gi1419016	Mus musculus	odorant receptor	281	53
35	10200	Y57903	Homo sapiens	Human transmembrane protein HTMPN-27.	448	100
36	10208	gi4062492	Escherichia coli		505	100
37	10212	gi8825229	Escherichia coli	ORF_f141	625	96
38	10213	gi4062778	Escherichia coli	Hypothetical protein HI0761	773	98
39	10214	gi6693832	Rattus norvegicus	opioid growth factor receptor	661	44
40	10227	G01360	Homo sapiens	Human secreted protein,	384	100
41	10236	gi1651257	Escherichia coli	.	373	100
42	10241	gi2769262	Escherichia coli	catabolite gene activator protein	178	96
43	10245	gi1789539	Escherichia coli	orf, hypothetical protein	679	98
44	10246	gi8824992	Escherichia coli	ORF_o179	488	97
45	10247	gi1742149	Escherichia coli	Sn-glycerol-3-phosphate	323	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				transport system permease protein UgpA.		
46	10282	Y29817	Homo sapiens	Human synapse related glycoprotein 2.	521	96
47	1031	gi6435130	Mus musculus	putative E1-E2 ATPase	990	86
48	1040	gi854124	Homo sapiens	Human giant larvae homologue	471	63
49	1043	gi3882285	Homo sapiens	KIAA0782 protein	154	61
50	1051	gi178216	Homo sapiens	anion exchange protein 1	172	100
51	1053	Y76748	Homo sapiens	Human protein kinase homologue, PKH-1.	180	92
52	1062	gi965014	Mus musculus	ADAM 4 protein precursor	492	65
53	1063	gi2393880	Drosophila melanogaster	A-kinase anchor protein DAKAP550	580	60
54	1066	gi2746788	Caenorhabditis elegans	contains similarity to transacylases	607	35
55	107	G00357	Homo sapiens	Human secreted protein,	183	77
56	1071	gi9105937	Xylella fastidiosa	Acetylglutamate kinase	505	36
57	1085	R95913	Homo sapiens	Neural thread protein.	257	55
58	1086	Y76332	Homo sapiens	Fragment of human secreted protein encoded by gene 38.	387	58
59	1088	gi4589642	Homo sapiens	KIAA0999 protein	873	99
60	109	gi763431	Homo sapiens	KIAA0999 protein	360	85
61	1095	Y94907	Homo sapiens	Human secreted	701	97

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Waterman Score	% Identity
				protein clone cal06_19x protein sequence		
62	1102	Y07096	Homo sapiens	Colon cancer associated antigen precursor sequence.	1982	100
63	1105	Y84907	Homo sapiens	A human proliferation and apoptosis related protein.	983	91
64	1108	gi1398903	Mus musculus	Ca2+ dependent activator protein for secretion	1307	89
65	1109	Y91524	Homo sapiens	Human secreted protein sequence encoded by gene 74	2400	99
66	1113	gi1657462	Sus scrofa	calcium/cal-modulin-dependent protein kinase II isoform gamma-E	1348	94
67	1117	Y32169	Homo sapiens	Human growth-associated protease inhibitor heavy chain precursor.	2831	97
68	1118	gi3063517	Homo sapiens		1138	98
69	1125	gi8248285	Homo sapiens	sphingosine kinase type 2 isoform	1290	98
70	1132	Y94918	Homo sapiens	Human secreted protein clone dd504_18 protein sequence	437	59
71	1143	gi45806	Homo sapiens	prepro-major	209	40

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces- sion No.	Species	Description	Smith- Water man Score	% Identity
		77		basic protein homolog		
72	1146	gi182395	Homo sapiens	focal adhesion kinase	131	87
73	1161	W90962	Homo sapiens	Human CSGP-2 protein.	931	100
74	117	W69428	Homo sapiens	Human secreted protein bp537_4.	159	93
75	1170	gi34339	Homo sapiens		586	87
76	1175	gi7960243	Homo sapiens	SNARE protein kinase SNAK	308	100
77	118	gi5360093	Homo sapiens	NY-REN-18 antigen	178	96
78	1183	gi292037	Homo sapiens	helix-loop-helix phosphoprotein	361	91
79	1193	gi1899186	Rattus norvegicus	polysialyltran sferase	171	76
80	1195	gi1399462	Homo sapiens	serine/threo-nine-protein kinase PRP4h	208	71
81	1198	gi181535	Homo sapiens	defensin precursor	150	71
82	1201	gi5668935	Rattus norvegicus	plasma membrane Ca2+ ATPase isoform 1kb	244	73
83	1207	gi6224868	Homo sapiens	TANK binding kinase TBK1	716	86
84	1210	gi179646	Homo sapiens	complement component C1s	242	61
85	1211	gi1483187	Homo sapiens		296	65
86	1214	gi7800638	Streptococcus pneumoniae	PspA	121	37
87	123	Y44810	Homo sapiens	Human Aspartic Protease-2 (NHAP-2).	218	93
88	1259	gi2116672	Homo sapiens	EAR-1r	128	70
89	1266	gi7243125	Homo sapiens	KIAA1372 protein	403	53
90	1270	gi1289445	Homo sapiens	diacylglycerol kinase epsilon DGK	125	96

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
91	1290	gi1429371	Drosophila melanogaster	ubiquitin-specific protease	470	41
92	1291	Y66755	Homo sapiens	Membrane-bound protein PRO1185.	993	100
93	1296	gi9652087	Homo sapiens	scavenger receptor cysteine-rich type 1 protein M160 precursor	1183	99
94	1299	gi7300398	Drosophila melanogaster	CG7683 gene product	397	40
95	1317	gi3695115	Rattus norvegicus	CL1AA	216	100
96	132	gi187171	Homo sapiens	12-lipoxygenase	176	97
97	1330	Y12482	Homo sapiens	Human 5' EST secreted protein	65	44
98	1336	gi10798814	Homo sapiens	MLTK-beta	2366	99
99	135	gi4560090	Homo sapiens	effector cell protease receptor 1	190	74
100	1356	gi193057	Mus musculus	envelope polyprotein precursor	131	36
101	1369	gi4586577	Homo sapiens	glucocorticoid receptor alpha-2	596	89
102	1392	gi8493519	Mus musculus	nuclear localization signal binding protein	145	59
103	1408	gi3127051	Rattus norvegicus	potassium channel regulatory protein KChAP	176	84
104	141	gi6453613	Mus musculus	putative protein kinase	204	33
105	1424	gi2982501	Homo sapiens	neuropathy target esterase	769	100
106	143	W50033	Homo sapiens	Human immunity related factor.	1201	98
107	1431	gi10644	Heterodera	hypothetical	133	36

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		565	glycines	esophageal gland cell secretory protein 10		
108	1441	gi3044086	Myxococcus xanthus	unknown	149	32
109	1444	gi7248381	Homo sapiens	adaptor protein p130Cas	1615	97
110	1447	Y65168	Homo sapiens	Human 5' EST related polypeptide	403	97
111	1457	W19919	Homo sapiens	Human Ksr-1 (kinase suppressor of Ras).	227	77
112	1471	G02532	Homo sapiens	Human secreted protein,	97	59
113	1473	gi6062874	Homo sapiens	candidate tumor suppressor protein DICE1	581	100
114	1474	Y64896	Homo sapiens	Human 5' EST related polypeptide	197	100
115	1483	gi4362218	Homo sapiens	KIAA0037	295	76
116	1486	gi5852834	Homo sapiens	bridging integrator-2	133	64
117	149	gi3327162	Homo sapiens	KIAA0674 protein	2243	98
118	1503	gi1736785	Escherichia coli	.	1270	97
119	1506	gi4062298	Escherichia coli	YhhI protein	612	90
120	1513	gi4062346	Escherichia coli	.	556	94
121	1514	gi216609	Escherichia coli	PhoQ protein	661	90
122	1523	gi5712756	Rattus norvegicus	calcium transporter CaT1	1178	90
123	1527	gi1853980	Mus musculus	glucocorticoid receptor interacting protein 1	171	84
124	1536	Y17227	Homo sapiens	Human secreted	452	100

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				protein (clone ya1-1).		
125	154	gi85150 90	Pinus taeda	putative arabinogalacta n protein	81	40
126	1544	gi38799 33	Caenorhabditi s elegans	Similarity to Xenopus F-spondin precursor (PIR Acc. No. comes from this gene	134	34
127	1554	gi65238 17	Homo sapiens	S1R protein	255	84
128	1555	gi66352 05	Homo sapiens	beta-ureidopropiona se	210	90
129	1556	Y39286	Homo sapiens	Phosphodiester ase 10 (PDE10) clone FB93a.	161	61
130	1564	gi89779 45	Streptomyces coelicolor A3(2)	putative secreted serine protease	231	45
131	1576	gi30258 28	Rattus norvegicus	signal transducer and activator of transcription 4	183	97
132	1578	gi51065 72	Homo sapiens	transcriptiona l activator SRCAP	758	98
133	1579	gi85755 27	Homo sapiens	toll-like receptor 8	595	99
134	158	gi40605 8	Mus musculus	protein kinase	168	70
135	1580	gi63340	Gallus gallus	c-Rmil	231	90
136	1588	gi22179 31	Homo sapiens	PKU-alpha	127	92
137	1589	gi12724 22	Mus musculus	Phosphoinositi de 3-kinase	720	99
138	159	gi22246 29	Homo sapiens	KIAA0344	215	43
139	1600	gi10160 12	Rattus norvegicus	neural cell adhesion protein BIG-2 precursor	543	93
140	161	gi66495 83	Homo sapiens	kidney and liver proline	1651	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				oxidase 1		
141	1612	gi406113	Rattus norvegicus	protein kinase I	125	89
142	1615	gi219992	Homo sapiens	phSR2	150	78
143	1620	gi5714636	Homo sapiens	serine/threonine protein kinase Kp78 splice variant CTAK75a	126	71
144	1644	Y13352	Homo sapiens	Amino acid sequence of protein PRO228.	2542	100
145	1647	Y99444	Homo sapiens	Human PRO1575 (UNQ781) amino acid sequence	704	100
146	1650	gi3789765	Homo sapiens	transmembrane receptor UNC5C	271	100
147	1663	W75258	Homo sapiens	Fragment of human secreted protein encoded by gene 26.	163	-96
148	1665	gi10432431	Homo sapiens	secreted modular calcium-binding protein	1428	99
149	1671	gi6708169	Mus musculus	inositol phosphatase eSHIPD183	169	97
150	1672	Y68773	Homo sapiens	Amino acid sequence of a human phosphorylation effector PHSP-5.	1030	99
151	1678	gi6063017	Homo sapiens	tousled-like kinase 1	132	86
152	1680	gi3510603	Homo sapiens	nuclear receptor co-repressor N-CoR	278	80
153	1692	gi1546084	Homo sapiens	farnesol receptor HRR-1	165	100
154	1698	gi520469	Oryctolagus cuniculus	597 aa protein related to	177	94

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				Na/glucose cotransporters		
155	1702	gi10432382	Homo sapiens		519	95
156	1704	Y91668	Homo sapiens	Human secreted protein sequence encoded by gene 73	214	75
157	1708	gi3080757	Mus musculus	growth factor independence-1B	457	78
158	1716	gi29653	Homo sapiens	putative oncogene	220	92
159	173	gi3452473	Rattus norvegicus	serine/threonine protein kinase TAO1	699	100
160	1731	Y27581	Homo sapiens	Human secreted protein encoded by gene No. 15.	774	100
161	1732	gi9652087	Homo sapiens	scavenger receptor cysteine-rich type 1 protein M160 precursor	1025	98
162	174	Y35923	Homo sapiens	Extended human secreted protein sequence,	1691	100
163	1740	Y53014	Homo sapiens	Human secreted protein clone fn189_13 protein sequence	337	60
164	1748	gi7770237	Homo sapiens	PRO2822	218	93
165	1751	gi8979825	Homo sapiens		306	50
166	1755	R95332	Homo sapiens	Tumor necrosis factor receptor 1 death domain ligand (clone	1184	62

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				3TW).		
167	1762	gi7380947	Homo sapiens	Gem-interacting protein	1545	99
168	1776	gi5912265	Homo sapiens	hypothetical protein	224	100
169	1777	Y70461	Homo sapiens	Human membrane channel protein-11 (MECHP-11).	413	95
170	1781	R26060	Homo sapiens	Growth Factor Receptor Bound protein GRB-1.	398	98
171	1796	gi10312169	Homo sapiens	serine carboxypeptidase 1 precursor protein	1381	99
172	180	gi3002527	Homo sapiens	neuronal thread protein AD7c-NTP	477	61
173	182	gi7385131	Homo sapiens	HBV pX associated protein-8; XAP-8	2066	82
174	1820	G03249	Homo sapiens	Human secreted protein,	370	97
175	1822	gi473969	Oryctolagus cuniculus	one of the members of sodium-glucose cotransporter family	1048	90
176	1829	gi10440355	Homo sapiens	FLJ00012 protein	310	96
177	1832	gi165650	Oryctolagus cuniculus	phosphorylase kinase beta-subunit	146	96
178	1834	W75132	Homo sapiens	Human secreted protein encoded by gene 11 clone HCENJ40.	423	47
179	1837	gi60369	Saimiriine herpesvirus 2	ORF 48~EDLF5~sim. to EBV BRRF2	615	71

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
180	1859	gi9989696	Homo sapiens	ROR2 protein	645	87
181	1880	gi7340847	Mus musculus	chondroItin 4-sulfotransferase	275	40
182	1881	gi7573291	Homo sapiens		298	100
183	1890	gi3149950	Homo sapiens	ST1C2	183	94
184	1899	gi2143260	Homo sapiens	Phosphoino-sitide 3-kinase	346	98
185	19	gi1808582	Homo sapiens	U2AF1-RS2	224	46
186	192	G03192	Homo sapiens	Human secreted protein,	267	86
187	1922	gi485858	Mus musculus	IB3/5-polypeptide	1206	78
188	1945	gi37261	Homo sapiens		1402	97
189	195	W67863	Homo sapiens	Human secreted protein encoded by gene 57 clone HFEBF41.	551	98
190	1957	gi406738	Homo sapiens	Shb	263	44
191	1969	Y41701	Homo sapiens	Human PRO708 protein sequence.	975	98
192	1970	gi3979817	Caenorhabditis elegans	Weak similarity to Human tyrosine-protein kinase CSK	254	49
193	1973	G00796	Homo sapiens	Human secreted protein,	365	98
194	1985	gi4558637	Homo sapiens	Putative homolog of hypoxia inducible factor three alpha	1420	99
195	1986	gi4455015	Homo sapiens	host cell factor homolog	367	50

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				LCP		
196	2	G02532	Homo sapiens	Human secreted protein,	106	85
197	2004	gi10503 935	Homo sapiens	type A calpain-like protease	961	100
198	2023	gi16513 41	Escherichia coli	.	1075	97
199	2025	Y71069	Homo sapiens	Human membrane transport protein, MTRP-14.	540	100
200	2038	gi85725 43	Homo sapiens	membrane-associated lectin type-C	686	98
201	2041	gi37400	Homo sapiens	trk-2h polypeptide	228	89
202	2043	W75096	Homo sapiens	Human secreted protein encoded by gene 40 clone HNEDJ57.	290	38
203	2068	G03394	Homo sapiens	Human secreted protein,	595	97
204	2072	gi21165 52	Rattus norvegicus	cationic amino acid transporter 3	1025	85
205	2076	gi15740 9	Drosophila melanogaster	fat protein	369	39
206	2078	gi10549 40	Gallus gallus	cSH-PTP2	605	94
207	2084	gi96631 28	Homo sapiens	hypothetical protein	874	99
208	2088	gi10567 590	Homo sapiens	sodium bicarbonate cotransporter-like protein	609	100
209	2089	gi17890 01	Escherichia coli	putative ATP-binding component of a transport system	961	98
210	2097	Y70460	Homo sapiens	Human membrane channel	258	96

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SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				protein-10 (MECHP-10).		
211	2108	gi3207508	Rattus norvegicus	hexokinase	767	74
212	2111	gi6330233	Homo sapiens	KIAA1176 protein	3710	99
213	2118	W74797	Homo sapiens	Human secreted protein encoded by gene 68 clone HKIXR69.	156	96
214	2134	gi1780991	Homo sapiens	branched chain acyl-CoA oxidase	209	97
215	2146	gi7688148	Homo sapiens	hypothetical protein	1038	100
216	2149	gi2280485	Homo sapiens	KIAA0376	917	100
217	2153	gi1842429	Rattus norvegicus	ankyrin binding cell adhesion molecule neurofascin	592	88
218	2155	gi6526791	Homo sapiens	Eps15R	1126	100
219	2161	gi7300427	Drosophila melanogaster	CG7709 gene product	200	33
220	2163	Y52296	Homo sapiens	Human isomerase homologue-3 (HIH-3).	186	91
221	2173	W34526	Homo sapiens	hTCP protein fragment.	164	93
222	2178	gi3360512	Rattus norvegicus	Citron-K kinase	299	94
223	2180	Y74008	Homo sapiens	Human prostate tumor EST fragment derived protein #195.	261	41
224	2184	gi53041	Mus musculus		130	41
225	2186	gi401774	Homo sapiens	ribosomal protein S6 kinase 3	142	64
226	2190	gi577295	Homo sapiens	The ha1225 gene product is related to human alpha-	176	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				glucosidase.		
227	2210	gi2055392	Rattus norvegicus	transmembrane receptor UNC5H1	620	90
228	2214	gi7861733	Homo sapiens	low density lipoprotein receptor related protein-deleted in tumor	1360	98
229	2223	gi7959189	Homo sapiens	KIAA1464 protein	884	99
230	223	W88627	Homo sapiens	Secreted protein encoded by gene 94 clone HPMBQ32.	300	77
231	2233	gi7839587	Homo sapiens	organic anion transporting polypeptide 14	1092	99
232	2237	gi10440400	Homo sapiens	FLJ00033 protein	1212	99
233	2251	gi5923786	Homo sapiens	zinc metallo-protease ADAMTS6	277	44
234	2256	W63698	Homo sapiens	Human secreted protein 18.	516	100
235	2259	gi4678722	Homo sapiens	hypothetical protein	387	36
236	2262	Y33741	Homo sapiens	Beta-secretase.	793	99
237	2265	gi7018545	Homo sapiens	hypothetical protein	608	94
238	2271	gi4186183	Homo sapiens	unknown	684	53
239	2273	gi7243035	Homo sapiens	KIAA1327 protein	1031	100
240	2280	gi5809678	Homo sapiens	sperm membrane protein BS-63	342	95
241	2286	gi6224691	Homo sapiens	Na+/sulfate cotransporter SUT-1	1221	99
242	2291	gi207621	Rattus norvegicus	uromodulin	345	50
243	2292	gi7296304	Drosophila melanogaster	CG5274 gene product	272	35
244	2294	Y28503	Homo sapiens	HGFH3 Human Growth Factor	320	98

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
				Homologue 3.		
245	2296	W88799	Homo sapiens	Polypeptide fragment encoded by gene 45.	223	86
246	2303	gi71101 60	Homo sapiens	guanine nucleotide exchange factor	1212	99
247	2306	gi64348 74	Mus musculus	calcium/calmod ulin dependent protein kinase kinase alpha	576	84
248	2309	Y95433	Homo sapiens	Human calcium channel SOC-2/CRAC-1 C-terminal polypeptide.	1203	99
249	2313	gi73009 43	Drosophila melanogaster	CG4677 gene product	689	79
250	2318	W48351	Homo sapiens	Human breast cancer related protein BCRB2.	202	59
251	2329	G01772	Homo sapiens	Human secreted protein,	311	84
252	2330	Y41729	Homo sapiens	Human PRO1071 protein sequence.	886	99
253	2342	gi37864 30	Caenorhabditi s elegans		268	42
254	2350	gi93010 4	Homo sapiens	protein-tyrosine phosphatase	571	79
255	2359	gi93925 91	Homo sapiens	CC chemokine CCL28	679	99
256	2361	gi16666 89	Mus musculus	alpha-NAC, muscle-specific form gp220	357	41
257	2374	G03172	Homo sapiens	Human secreted protein,	112	78
258	2387	gi13991 97	Homo sapiens	pyruvate dehydrogenase kinase isoform 4	201	85
259	2401	G01757	Homo sapiens	Human	612	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein,		
260	2409	gi181123	Homo sapiens	cleavage signal 1 protein	194	86
261	2431	gi7018547	Homo sapiens	hypothetical protein	473	50
262	2432	gi4826496	Homo sapiens		327	39
263	2467	G03667	Homo sapiens	Human secreted protein,	640	97
264	2471	gi7688148	Homo sapiens	hypothetical protein	1284	91
265	2478	gi7908119	Homo sapiens	polycystic kidney disease-associated protein	615	90
266	2484	gi3327080	Homo sapiens	KIAA0633 protein	1747	99
267	249	G03793	Homo sapiens	Human secreted protein,	139	65
268	2490	gi6467371	Homo sapiens	thyrotropin-releasing hormone degrading ectoenzyme	757	98
269	25	G03203	Homo sapiens	Human secreted protein,	137	65
270	2504	gi4097712	Homo sapiens	HBV associated factor	166	74
271	2506	gi2072784	Homo sapiens	Na+/nucleoside cotransporter	201	95
272	2507	gi5924007	Homo sapiens		335	38
273	2510	gi7717385	Homo sapiens	beta-site APP-cleaving enzyme 2, EC 3.4.23.	383	89
274	2523	gi339709	Homo sapiens		150	96
275	253	gi36615	Homo sapiens	serine/threonine protein kinase	391	77
276	2533	gi45896	Homo sapiens	KIAA0985	191	61

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith.-Water man Score	% Identity
		14		protein		
277	2536	gi20886 85	Caenorhabditi s elegans	strong similarity to the CDC2/CDX subfamily of ser/thr protein kinases	419	55
278	2544	gi10024 25	Mus musculus	YSPL-1 form 2	280	80
279	2568	Y41738	Homo sapiens	Human PRO541 protein sequence.	379	49
280	2580	gi30044 82	Rattus norvegicus	putative integral membrane transport protein	382	49
281	2593	gi73000 49	Drosophila melanogaster	CG4525 gene product	582	50
282	2600	gi45304 37	Homo sapiens	thyroid hormone receptor-associated protein complex component TRAP240	334	90
283	2625	gi80996 52	Homo sapiens	toll-like receptor 9 form A	761	96
284	2641	gi14801 9	Escherichia coli	tolA	692	100
285	2667	gi17503 87	Pseudomonas aeruginosa	Carbamoyl-phosphate synthetase large subunit	143	76
286	2670	gi48834 37	Mus musculus	RNA binding protein	139	92
287	2673	Y66656	Homo sapiens	Membrane-bound protein PRO943.	1869	98
288	2676	gi38859 78	Mus musculus	mismatch-specific thymine-DNA glycosylate	123	88
289	2680	gi64534 38	Homo sapiens	hypothetical protein	465	82
290	2682	gi18417	Mus musculus	GATA-5	527	77

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		56		cardiac transcription factor		
291	2684	gi9844920	Homo sapiens	nicotinic acetylcholine receptor subunit alpha 10	294	88
292	2695	gi1789764	Escherichia coli	putative transport	879	98
293	2697	gi349229	Escherichia coli	peripheral membrane protein	936	99
294	2698	gi4062194	Escherichia coli	.	737	100
295	2700	gi529240	Escherichia coli	homoserine kinase	578	100
296	2704	gi1552831	Escherichia coli	hypothetical	420	100
297	2712	gi1789672	Escherichia coli	putative ATP-binding component of a transport system	262	100
298	2716	gi4062409	Escherichia coli	Transmembrane protein dppC	382	100
299	2719	gi304976	Escherichia coli	matches PS00017: ATP_GTP_A and PS00301: EFACTOR_GTP; similar	921	95
300	2724	gi1458566	Escherichia coli	nmpC	647	97
301	2725	gi1789473	Escherichia coli	putative transport protein	312	100
302	2728	gi1805561	Escherichia coli		222	97
303	2729	gi43248	Escherichia coli		655	91
304	2744	gi396299	Escherichia coli	similar to E. coli pyruvate formate-lyase activating enzyme	675	100
305	2749	gi1742648	Escherichia coli	.	592	100
306	2752	gi40622	Escherichia	Sensor kinase	357	100

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces- sion No.	Species	Description	Smith - Water man Score	% Identity
		36	coli	CitA		
307	2762	gi17877 95	Escherichia coli	putative LACI-type transcriptiona l regulator	342	100
308	2764	gi17997 43	Escherichia coli	putative LACI-type transcriptiona l regulator	151	84
309	2768	gi40596 4	Escherichia coli	yohG	534	94
310	2774	gi40623 38	Escherichia coli	.	387	97
311	2790	gi40623 38	Escherichia coli	.	420	86
312	2800	gi17898 05	Escherichia coli	putative transport	572	100
313	2811	gi53053 33	Mus musculus	protein kinase Myak-S	421	49
314	2827	gi10047 251	Homo sapiens	KIAA1588 protein	531	97
315	2830	G02872	Homo sapiens	Human secreted protein,	185	62
316	2836	gi19117 5	Cricetulus sp.	cAMP- dependent protein kinase alpha- catalytic subunit	1677	97
317	2851	gi55884 6	Homo sapiens	BCL2/adeno- virus E1B 19kD- interacting protein 3	220	61
318	2856	gi38822 11	Homo sapiens	KIAA0745 protein	232	93
319	2866	gi63297 08	Homo sapiens	KIAA1119 protein	1331	91
320	2874	gi28530 33	Mus musculus	tousled-like kinase	203	82
321	2882	gi10185 134	Schizosacchar omyces pombe	hypothetical zinc-finger protein	318	42
322	2886	G03797	Homo sapiens	Human secreted protein,	140	69
323	2899	gi42403 25	Homo sapiens	KIAA0918 protein	170	53

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
324	2906	Y94988	Homo sapiens	Human secreted protein v11_1,	1738	100
325	2920	gi9453735	Homo sapiens		1926	100
326	2925	gi6434876	Homo sapiens	CDK4-binding protein p34SEI1	1210	100
327	2930	gi3941320	Schistosoma japonicum	myosin	208	28
328	2934	Y31645	Homo sapiens	Human transport-associated protein-7 (TRANP-7).	642	63
329	2955	G01165	Homo sapiens	Human secreted protein,	528	99
330	2967	gi7263960	Homo sapiens		466	100
331	2980	gi4589530	Homo sapiens	KIAA0943 protein	1849	94
332	2994	G03812	Homo sapiens	Human secreted protein,	124	61
333	2996	gi9857400	Homo sapiens	tumor endothelial marker 1 precursor	2666	98
334	2999	Y66697	Homo sapiens	Membrane-bound protein PRO1383.	2254	100
335	3	gi6289072	Homo sapiens	JM24 protein	930	100
336	3008	Y45219	Homo sapiens	Human CASB47 protein.	557	92
337	3013	gi5262678	Homo sapiens	hypothetical protein	1747	100
338	3041	Y73335	Homo sapiens	HTRM clone 1850120 protein sequence.	1315	99
339	306	gi4868443	Mesocricetus auratus	Mx-interacting protein kinase PKM	1867	95
340	3061	gi4333338	Homo sapiens	protein-tyrosine kinase	3934	94

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
341	309	Y76145	Homo sapiens	Human secreted protein encoded by gene 22.	1313	99
342	3095	gi7300159	Drosophila melanogaster	CG14899 gene product	190	57
343	3098	gi532056	Homo sapiens	protein-tyrosine-phosphatase	2641	86
344	3105	gi285987	Homo sapiens	mitochondrial outer membrane protein 19	192	71
345	3118	gi9929935	Macaca fascicularis	hypothetical protein	180	61
346	3124	gi8131903	Mus musculus	transient receptor potential-related protein	226	100
347	3126	Y02370	Homo sapiens	Polypeptide identified by the signal sequence trap method.	261	100
348	3166	gi7290860	Drosophila melanogaster	CG1531 gene product	534	42
349	3175	gi6649583	Homo sapiens	kidney and liver proline oxidase 1	1752	95
350	3176	gi7208438	Homo sapiens	long-chain 2-hydroxy acid oxidase HAOX2	1048	95
351	3188	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	243	57
352	3191	gi7105926	Homo sapiens	calcium channel alpha2-delta3 subunit	300	96
353	3208	gi10334774	Homo sapiens	MUCDHL-FL	613	98
354	3226	Y87209	Homo sapiens	Human secreted protein sequence	3147	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
355	3235	gi6715135	Homo sapiens	Fanconi anemia, complementation group F	1947	99
356	3257	gi5441615	Canis familiaris	zinc finger protein	326	42
357	3282	G03002	Homo sapiens	Human secreted protein,	211	61
358	3289	gi3288457	Homo sapiens	PI3-kinase	5832	97
359	3296	gi7770139	Homo sapiens	PRO1722	293	64
360	3298	gi2198815	Ambystoma tigrinum	electrogenic Na+ bicarbonate cotransporter; NBC	1278	52
361	3303	gi4028015	Homo sapiens	potassium channel	1881	92
362	3305	gi5902966	Homo sapiens	very large G-protein coupled receptor-1	1770	100
363	3308	gi219994	Homo sapiens	The first in-frame ATG codon is located at nucleotides NPPase.	3967	86
364	3325	gi3510234	Homo sapiens	R31237_1, partial CDS	192	94
365	3341	W78899	Homo sapiens	Human UNC-5 homologue UNC5H-1.	1614	90
366	3342	gi1478205	Mus musculus	PNG protein	341	70
367	3350	gi2739460	Bos taurus	regulator of G-protein signaling 7	2263	98
368	3372	gi7671663	Homo sapiens		375	79
369	338	Y84322	Homo sapiens	A human cardiovascular system associated protein kinase-3.	2606	100
370	3383	gi10441	Homo sapiens	protein	1127	100

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
		382		kinase		
371	3395	gi53082 3	Homo sapiens	epidermal growth factor receptor kinase substrate	402	47
372	3405	Y29332	Homo sapiens	Human secreted protein clone pe584_2 protein sequence.	1220	94
373	3408	gi33347 41	Homo sapiens	shal-type potassium channel	2888	90
374	345	gi45395 27	Homo sapiens	NAALADase L protein	600	72
375	346	Y95434	Homo sapiens	Human calcium channel SOC-3/CRAC-2 C-terminal polypeptide.	1802	99
376	3470	gi97984 52	Homo sapiens	putative capacitative calcium channel	277	100
377	3482	gi38185 72	Homo sapiens	cAMP-specific phosphodiester ase 8B; PDE8B1; 3',5'-cyclic nucleotide phosphodiester ase	2353	96
378	3492	gi16658 25	Homo sapiens		3878	99
379	3530	gi50510 0	Homo sapiens	KIAA0066	3637	100
380	3533	Y32169	Homo sapiens	Human growth-associated protease inhibitor heavy chain precursor.	2860	99
381	3545	gi66241 33	Homo sapiens		449	98
382	3549	gi14691 93	Homo sapiens	The KIAA0135 gene is related to	5374	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				pim-1 oncogene.		
383	3595	gi6330190	Homo sapiens	KIAA1169 protein	1893	100
384	3601	gi808915	Homo sapiens	tumor necrosis factor receptor type 1 associated protein	992	99
385	3612	gi5305448	Mus musculus	SH2-B PH domain containing signaling mediator 1 gamma isoform	1439	92
386	3613	Y32194	Homo sapiens	Human receptor molecule (REC) encoded by Incyte clone 266775.	1438	100
387	3621	gi8978499	Mus musculus	ubiquitinating enzyme E2-230 kDa	393	68
388	3624	R47858	Homo sapiens	Human LDL receptor Domains 1 and 2.	2895	100
389	3625	Y57949	Homo sapiens	Human transmembrane protein HTMPN-73.	1868	100
390	3626	W69342	Homo sapiens	Secreted protein of clone CJ424_9.	442	94
391	3627	gi6537136	Homo sapiens	putative organic anion transporter	982	92
392	3630	Y06886	Homo sapiens	HWHHJ20 polypeptide.	1109	91
393	3642	gi4886467	Homo sapiens	hypothetical protein	570	52
394	3645	gi9588402	Homo sapiens		598	98
395	3647	Y12050	Homo sapiens	Human 5' EST secreted protein	517	98

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SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
396	3653	Y70018	Homo sapiens	Human Protease and associated protein-12 (PPRG-12).	2232	99
397	3676	W67818	Homo sapiens	Human secreted protein encoded by gene 12 clone HMSJJ74.	338	100
398	3677	gi32093	Homo sapiens	HGMP07J	650	52
399	3681	Y48443	Homo sapiens	Human prostate cancer-associated protein 140.	803	93
400	3682	gi4691726	Homo sapiens	ARF GTPase-activating protein GIT1	2435	91
401	3688	gi6693824	Homo sapiens	ubiquitin-specific protease	1995	99
402	3689	Y94927	Homo sapiens	Human secreted protein clone ck213_12 protein sequence	530	81
403	3690	gi1871612	Oryctolagus cuniculus	ryanodine receptor	594	95
404	3706	gi6002714	Homo sapiens	membrane-type serine protease 1	2630	94
405	3714	gi2695708	Homo sapiens	SPOP	553	81
406	3720	gi9309293	Homo sapiens	asc-type amino acid transporter 1	566	95
407	3726	gi10440381	Homo sapiens	FLJ00026 protein	1023	69
408	373	gi5714696	Mus musculus	alpha 2 delta calcium channel subunit	243	95
409	3788	gi6911219	Homo sapiens	type II membrane serine protease	841	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
410	3789	Y45023	Homo sapiens	Human sensory transduction G-protein coupled receptor-B3.	1084	95
411	3790	gi1524088	Homo sapiens	Polio virus receptor protein	1508	99
412	3801	gi6723675	Homo sapiens	mitotic kinase-like protein-1	2035	99
413	3803	gi968973	Homo sapiens	mitotic kinase-like protein-1	332	86
414	3820	gi177047 8	Homo sapiens	NK receptor	1988	99
415	3831	gi2781386	Homo sapiens		1493	99
416	3837	gi9367840	Homo sapiens	neuronal apoptosis inhibitory protein 2	2243	99
417	385	gi1526978	Homo sapiens	ryanodine receptor 2	149	96
418	3856	gi9956554	Homo sapiens	interleukin-11 receptor	147	100
419	386	gi4960038	Mus musculus	T2K protein kinase homolog	669	66
420	3861	Y74129	Homo sapiens	Human prostate tumor EST fragment derived protein #316.	842	98
421	3883	gi6635205	Homo sapiens	beta-ureidopropionase	1576	100
422	3898	gi37231	Homo sapiens	DNA topoisomerase II	8436	99
423	3921	gi8648881	Homo sapiens	putative organic anion transporter	131	100
424	3932	gi8575775	Homo sapiens	KRAB zinc finger protein	1935	99
425	3934	gi4689128	Homo sapiens	SIH003	127	92
426	3963	gi3212996	Homo sapiens		339	64
427	3974	G03790	Homo sapiens	Human	232	63

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein,		
428	3983	gi181971	Homo sapiens	vascular endothelial growth factor	433	85
429	3999	gi1657464	Sus scrofa	calcium/calmodulin-dependent protein kinase II isoform gamma-G	484	75
430	4001	gi6572230	Homo sapiens		329	100
431	4009	gi2143260	Homo sapiens	phosphoinositide 3-kinase	521	99
432	401	gi6572379	Homo sapiens		1372	56
433	4020	gi2815624	Homo sapiens	tumor necrosis factor superfamily member LIGHT	1252	100
434	4024	Y21166	Homo sapiens	Human bcl2 proto-oncogene mutant protein fragment 14.	84	40
435	4040	Y57285	Homo sapiens	Human GPCR protein (HGPRP) sequence (clone ID 2214673).	1726	99
436	4057	W74873	Homo sapiens	Human secreted protein encoded by gene 145 clone HFXHL79.	531	100
437	4066	G03714	Homo sapiens	Human secreted protein,	92	70
438	4067	gi8331760	Homo sapiens	LU1 protein	1077	92
439	4078	Y57900	Homo sapiens	Human transmembrane protein HTMPN-24.	996	100
440	4120	gi18715	Homo sapiens	mitogen-	927	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		39		activated protein kinase phosphatase 4		
441	4123	gi5360125	Homo sapiens	NY-REN-58 antigen	140	100
442	4130	gi6289072	Homo sapiens	JM24 protein	604	100
443	4133	gi8575527	Homo sapiens	toll-like receptor 8	755	100
444	4166	gi6118555	Homo sapiens	DEAD-box protein abstrakt	2512	100
445	4167	gi3800830	Rattus norvegicus	putative four repeat ion channel	615	93
446	4172	gi7209676	Homo sapiens	potassium channel Kv8.1	369	100
447	4185	gi5305405	Homo sapiens	Na+/H+ exchanger isoform 2	1769	100
448	4197	gi2811122	Xenopus laevis	NaDC-2	524	69
449	4203	Q89840_aa1	Homo sapiens	Human death associated protein DAP-3.	198	97
450	4262	gi5901478	Marmota marmota	olfactory receptor	209	92
451	4276	gi32456	Homo sapiens	protein-tyrosine phosphatase	3270	99
452	4283	R41231	Homo sapiens	GAT-2 transporter gene.	477	100
453	4331	gi3171912	Homo sapiens	RAMP2	443	98
454	4340	gi8118223	Homo sapiens	unknown	1330	100
455	4351	gi1754515	Rattus norvegicus	aminopeptidase-B	2050	92
456	4354	Y57906	Homo sapiens	Human transmembrane protein HTMPN-30.	1402	100
457	4385	gi5596433	Homo sapiens	candidate tumor suppressor protein NOC2	509	97

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
458	4388	W78140	Homo sapiens	Human secreted protein encoded by gene 15 clone HSDES04.	100	94
459	4405	Y48226	Homo sapiens	Human prostate cancer-associated protein 12.	1246	99
460	441	gi291536	Bovine herpesvirus 1	BICP4	106	35
461	4417	gi6562533	Homo sapiens	sialin	939	100
462	4419	gi1841555	Homo sapiens	NG5	146	33
463	4443	gi4961399	Mus musculus	AMPA selective glutamate receptor	262	94
464	4470	gi7248381	Homo sapiens	adaptor protein p130Cas	2592	100
465	4482	gi7329979	Homo sapiens	apoptosis regulator	2071	100
466	4487	gi6706659	Homo sapiens		405	100
467	4491	gi9837341	Homo sapiens	CamKI-like protein kinase	1044	100
468	4492	Y42751	Homo sapiens	Human calcium binding protein 2 (CaBP-2).	586	99
469	4497	gi6179740	Homo sapiens	paraneoplastic cancer-testis-brain antigen	352	37
470	4502	gi6329742	Homo sapiens	KIAA1124 protein	327	100
471	4519	Y99426	Homo sapiens	Human PRO1604 (UNQ785) amino acid sequence	1563	100
472	4526	Y08008	Homo sapiens	Human HLIG-1 protein.	4023	99
473	4547	gi4589562	Homo sapiens	KIAA0959 protein	4165	99
474	4554	gi1381029	Mus musculus		1164	77

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
475	4555	gi2792366	Homo sapiens	unknown protein IT12	4461	99
476	457	Y70551	Homo sapiens	Human latent transforming growth factor-beta binding protein 3 (I).	1825	100
477	4571	gi5360115	Homo sapiens	NY-REN-45 antigen	869	100
478	4613	Y05868	Homo sapiens	Human Toll protein PRO358.	2413	100
479	4614	Y27129	Homo sapiens	Human bone marrow-derived polypeptide (clone OAF038-Leu).	1815	100
480	4622	G03789	Homo sapiens	Human secreted protein,	173	53
481	4667	gi7673638	Danio rerio	Dedd1	446	48
482	4670	gi402649	Homo sapiens	c-rel	2309	100
483	4683	Y68773	Homo sapiens	Amino acid sequence of a human phosphorylation effector PHSP-5.	2234	99
484	4698	Y73470	Homo sapiens	Human secreted protein clone yd141_1 protein sequence	746	100
485	4724	gi6456846	Homo sapiens	hypothetical protein	1101	99
486	4734	gi3334982	Homo sapiens	R27216_1	1151	80
487	4814	gi6274473	Homo sapiens	pregnancy-induced growth inhibitor	1348	100
488	4819	Y07825	Homo sapiens	Human secreted protein fragment #4 encoded from	117	67

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				gene 28.		
489	4821	Y81498	Homo sapiens	Human foetal bone-derived growth factor-like protein.	1200	100
490	4851	gi5689491	Homo sapiens	KIAA1077 protein	4364	99
491	4872	gi5911953	Homo sapiens	hypothetical protein	3723	99
492	4902	B08917	Homo sapiens	Human secreted protein sequence encoded by gene 27	717	100
493	5006	gi4357774	Homo sapiens	receptor tyrosine kinase isoform FLT4 long, FLT41 {C-terminal}	385	100
494	5007	Y93951	Homo sapiens	Amino acid sequence of a Brainiac-5 polypeptide.	804	100
495	5027	gi3548791	Homo sapiens	R33590_1	1606	100
496	5029	gi5689527	Homo sapiens	KIAA1095 protein	5722	99
497	5033	Y14482	Homo sapiens	Fragment of human secreted protein encoded by gene 17.	166	66
498	5040	Y95019	Homo sapiens	Human secreted protein vq1_1,	258	92
499	5061	gi1304434	Pseudorabies virus	EP0	85	38
500	5081	gi4038081	Homo sapiens	vascular endothelial cell growth inhibitor	134	100
501	5129	gi3169158	Homo sapiens	BC269730_2	2340	99
502	5139	gi4062856	Homo sapiens	HEXIM1 protein	293	47
503	5174	gi93685	Homo sapiens	140up gene	576	90

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		40		product		
504	524	G00329	Homo sapiens	Human secreted protein,	565	100
505	5291	Y92515	Homo sapiens	Human OXRE-12.	1271	98
506	5335	gi7296158	Drosophila melanogaster	CG3862 gene product	753	46
507	5346	Y94987	Homo sapiens	Human secreted protein vjl_1,	849	100
508	5379	gi7144506	Homo sapiens	cytokine-inducible SH2-containing protein	1353	99
509	5441	gi8096551	Homo sapiens	similar to mouse Ehm2	1516	100
510	549	Y22113	Homo sapiens	Human ZSMF-3 protein sequence.	294	62
511	5542	Y76267	Homo sapiens	Fragment of human secreted protein encoded by gene 11.	1066	100
512	5560	G03790	Homo sapiens	Human secreted protein,	103	36
513	5696	gi7920398	Homo sapiens	PTOV1	1904	91
514	5704	B08930	Homo sapiens	Human secreted protein sequence encoded by gene 2	987	100
515	5758	W18878	Homo sapiens	Human protein kinase C inhibitor, IPKC-1.	368	100
516	5760	gi6562176	Homo sapiens	hypothetical protein	425	100
517	5763	Y41706	Homo sapiens	Human PRO381 protein sequence.	441	100
518	5787	Y57907	Homo sapiens	Human transmembrane protein HTMPN-31.	952	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
519	5823	gi9800242	rat cytomegalovirus Maastricht	pr5	153	36
520	5886	gi1781037	Mus musculus	neuronal tyrosine threonine phosphatase 1	1135	52
521	5924	W69221	Homo sapiens	Human parotid secretory protein.	710	96
522	5960	Y91529	Homo sapiens	Human secreted protein sequence encoded by gene 79	1300	99
523	5962	W69784	Homo sapiens	Protein Kinase C Inhibitor-like Protein (IPKC-2).	395	100
524	5969	Y79141	Homo sapiens	Human haemopoietic stem cell regulatory protein SCM113.	1205	79
525	5976	gi780310	Homo sapiens	natural killer associated transcript 4	1808	91
526	6002	gi2104553	Homo sapiens		4367	67
527	6008	Y66765	Homo sapiens	Membrane-bound protein PRO1384.	822	100
528	6020	gi1911548	Homo sapiens	cytochrome c-like polypeptide	322	50
529	6036	W71362	Homo sapiens	Human cytokine/steroid receptor protein.	353	51
530	6070	Y42750	Homo sapiens	Human calcium binding protein 1 (CaBP-1).	626	100
531	6075	gi10732648	Homo sapiens	angiopoietin-like protein	2164	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				PP1158		
532	6106	gi2217970	Homo sapiens	p40	1349	96
533	6420	W82000	Homo sapiens	Human adult brain secreted protein dm26_2.	929	100
534	6434	gi10732648	Homo sapiens	angiopoietin-like protein PP1158	2164	100
535	6439	gi189701	Homo sapiens	endothelial cell growth factor	376	100
536	6463	Y41720	Homo sapiens	Human PRO792 protein sequence.	360	82
537	6466	gi4884084	Homo sapiens	hypothetical protein	538	100
538	6508	gi5442030	Homo sapiens	aminopeptidase	2317	96
539	6570	gi5921491	Homo sapiens		1591	99
540	6719	gi31847	Homo sapiens	glypican	1625	87
541	6772	Y65432	Homo sapiens	Human 5' EST related polypeptide	180	53
542	6789	gi537292	Homo sapiens	ICH-1L	1556	100
543	6805	gi4454702	Homo sapiens	HSPC007	634	84
544	6833	gi1890660	Homo sapiens	protein tyrosine phosphatase receptor omicron	5726	87
545	6834	gi5921491	Homo sapiens		1746	88
546	6851	gi2407641	Homo sapiens	neuropilin	3968	98
547	6868	gi6714641	Drosophila melanogaster	MAP kinase phosphatase	218	49
548	6876	Y13138	Homo sapiens	Human secreted protein encoded by 5' EST	414	76
549	688	Y73463	Homo sapiens	Human secreted protein clone	701	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				yk199_1 protein sequence		
550	6897	gi5815180	Homo sapiens	unknown	509	97
551	690	gi10645186	Homo sapiens	meningioma-expressed antigen 5s splice variant	522	100
552	6909	W78149	Homo sapiens	Human secreted protein encoded by gene 24 clone HSVBF78.	485	100
553	6924	Y35923	Homo sapiens	Extended human secreted protein sequence,	514	99
554	6937	G03798	Homo sapiens	Human secreted protein,	281	70
555	6951	gi511857	Homo sapiens	prostate-specific antigen	364	95
556	7008	G03200	Homo sapiens	Human secreted protein,	548	98
557	7009	Y22213	Homo sapiens	Human V201 protein sequence.	856	100
558	7057	gi6003654	Homo sapiens	brain specific membrane-anchored protein BSMAP	1814	100
559	7098	W27291	Homo sapiens	Human H1075-1 secreted protein 5' end.	712	100
560	7114	gi3212110	Homo sapiens	prefoldin subunit 1	534	98
561	712	gi4558641	Homo sapiens	P85B_HUMAN; PTDINS-3-KINASE P85-BETA	470	74
562	7215	gi4868366	Homo sapiens	delta-6 fatty acid desaturase	2437	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
563	7244	Y12445	Homo sapiens	Human 5' EST secreted protein	428	100
564	7248	gi311376	Homo sapiens	Humig	633	100
565	7252	gi5689531	Homo sapiens	KIAA1097 protein	5240	100
566	7292	gi5106998	Homo sapiens	HSPC040 protein	580	100
567	7306	Y32201	Homo sapiens	Human receptor molecule (REC) encoded by Incyte clone 2057886.	1974	95
568	7338	Y73880	Homo sapiens	Human prostate tumor EST fragment derived protein #67.	1566	100
569	736	gi10178317	Homo sapiens		1468	100
570	737	G00851	Homo sapiens	Human secreted protein,	522	98.
571	740	W85610	Homo sapiens	Secreted protein clone eh80_1.	1115	87
572	7400	Y93948	Homo sapiens	Amino acid sequence of a lectin ss3939 polypeptide.	1982	98
573	7415	gi3043670	Homo sapiens	KIAA0573 protein	2392	100
574	7429	Y40864	Homo sapiens	A human glutathione-S-transferase (hGST) protein.	1183	99
575	7458	Y53643	Homo sapiens	A bone marrow secreted protein designated BMS6.	554	99
576	7516	gi4468311	Homo sapiens		1146	99
577	7526	gi4138922	Homo sapiens	promyelocytic leukemia zinc finger	3571	99

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SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				protein; kruppel-like zinc finger protein; PLZF		
578	7571	G02915	Homo sapiens	Human secreted protein,	209	100
579	7614	W74726	Homo sapiens	Human secreted protein fg949_3.	1879	100
580	7663	gi5912548	Homo sapiens		1634	100
581	7686	gi4929711	Homo sapiens	CGI-121 protein	870	100
582	7714	gi388765	Homo sapiens	phospholipase D	4428	99
583	7724	G03933	Homo sapiens	Human secreted protein,	570	100
584	7834	gi8919166	Homo sapiens	mesenchymal stem cell protein DSC92	1133	100
585	7855	Y48505	Homo sapiens	Human breast tumour-associated protein 50.	684	100
586	7870	Y13372	Homo sapiens	Amino acid sequence of protein PRO223.	2559	100
587	7871	Y91689	Homo sapiens	Human secreted protein sequence encoded by gene 93	768	100
588	7892	gi34659	Homo sapiens	macrophage inflammatory protein-2alpha precursor	532	100
589	7927	gi32575	Homo sapiens		183	91
590	7944	gi1657458	Sus scrofa	calcium/calmodulin-dependent protein kinase II isoform gamma-B	2744	100
591	7947	G01131	Homo sapiens	Human	574	96

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein,		
592	800	gi3021428	Homo sapiens	neutral sphingomyelinase	167	68
593	8055	gi4929637	Homo sapiens	CGI-84 protein	1038	100
594	8082	gi4679014	Homo sapiens	HSPC014	715	100
595	8127	gi9955693	Homo sapiens	twisted gastrulation protein	905	95
596	8174	gi5532294	Homo sapiens	MUM2	767	100
597	8178	gi4530587	Homo sapiens	TADA1 protein	1132	100
598	8215	R66278	Homo sapiens	Therapeutic polypeptide from glioblastoma cell line.	830	100
599	8263	Y48371	Homo sapiens	Human prostate cancer-associated protein 68.	713	98
600	827	gi3172337	Cavia porcellus	phospholipase B	955	73
601	828	Y29517	Homo sapiens	Human lung tumour protein SAL-82 predicted amino acid sequence.	833	94
602	8294	gi4929767	Homo sapiens	CGI-149 protein	1085	100
603	8313	gi5771420	Homo sapiens	group IID secretory phospholipase A2	852	100
604	832	Y86260	Homo sapiens	Human secreted protein HELHN47,	319	78
605	8357	gi4191358	Mus musculus	claudin-7	164	47
606	8373	gi1945271	Homo sapiens	protein phosphatase 6	1666	100
607	8379	gi58529	Homo sapiens		1226	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
		81		cardiotrophin-like cytokine CLC		
608	8380	gi3402216	Homo sapiens	protein	974	100
609	8386	gi386988	Homo sapiens	oncostatin M	1297	99
610	8418	Y70210	Homo sapiens	Human TANGO 130 protein.	722	98
611	8442	G01895	Homo sapiens	Human secreted protein,	490	95
612	8457	G04048	Homo sapiens	Human secreted protein,	450	98
613	8458	W97119	Homo sapiens	S-adenosyl-L-methyltransferase (SAM-MT) protein.	1484	100
614	8469	gi7159799	Homo sapiens		255	100
615	8480	gi4589530	Homo sapiens	KIAA0943 protein	1998	100
616	8521	gi5726235	multiple sclerosis associated retrovirus element	unknown protein U5/2	250	82
617	857	gi9663958	Homo sapiens	cysteinyl leukotriene CysLT2 receptor	612	99
618	8574	gi6841260	Homo sapiens	HSPC305	1049	100
619	8606	gi3367707	Homo sapiens	scrapie responsive protein 1	544	100
620	8632	G01158	Homo sapiens	Human secreted protein,	502	100
621	8646	gi3882249	Homo sapiens	KIAA0764 protein	2175	100
622	8666	Y66196	Homo sapiens	Human bladder tumour EST encoded protein 54.	1080	95
623	8675	gi9963908	Homo sapiens	NPD009	432	96
624	8683	G04018	Homo sapiens	Human	469	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				secreted protein,		
625	8708	gi163356 4	Homo sapiens	C8	364	98
626	8720	gi824848 5	Homo sapiens	hepatocellular carcinoma-associated antigen 56A	191	69
627	8756	Y94984	Homo sapiens	Human secreted protein ve11_1,	369	97
628	8765	Y00346	Homo sapiens	Fragment of human secreted protein encoded by gene 2.	1068	97
629	8783	Y27918	Homo sapiens	Human secreted protein encoded by gene No. 123.	1051	95
630	8804	Y25426	Homo sapiens	Human SIGIRR protein.	887	100
631	8838	Y99409	Homo sapiens	Human PRO1343 (UNQ698) amino acid sequence	1279	100
632	8851	W74785	Homo sapiens	Human secreted protein encoded by gene 56 clone HSAXS65.	454	100
633	8853	W75116	Homo sapiens	Human secreted protein encoded by gene 60 clone HILCJ01.	245	95
634	8857	gi256519 6	Homo sapiens	non-functional folate binding protein	479	74
635	8859	Y02690	Homo sapiens	Human secreted protein encoded by gene 41c lone	600	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				HSZAF47.		
636	8901	Y86491	Homo sapiens	Human gene 59-encoded protein fragment,	548	99
637	8907	W88745	Homo sapiens	Secreted protein encoded by gene 30 clone HTSEV09.	2004	99
638	8934	W75088.	Homo sapiens	Human secreted protein encoded by gene 32 clone HAGBB70.	421	98
639	8960	Y02693	Homo sapiens	Human secreted protein encoded by gene 44 clone HTDAD22.	267	72
640	8979	Y76143	Homo sapiens	Human secreted protein encoded by gene 20.	1374	98
641	8980	Y11433	Homo sapiens	Human 5' EST secreted protein	466	100
642	8986	G02626	Homo sapiens	Human secreted protein,	306	100
643	8987	G02093	Homo sapiens	Human secreted protein,	486	97
644	8995	Y12908	Homo sapiens	Human 5' EST secreted protein	181	100
645	9035	Y71108	Homo sapiens	Human Hydrolase protein-6 (HYDRL-6).	800	100
646	9062	gi88860 05	Homo sapiens	lysophosphatid ic acid acyltransferas e-delta	523	100
647	9074	Y25761	Homo sapiens	Human	1366	99

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				secreted protein encoded from gene 51.		
648	9075	Y73336	Homo sapiens	HTRM clone 1852290 protein sequence.	1591	100
649	9098	Y57878	Homo sapiens	Human transmembrane protein HTMPN-2.	516	100
650	9109	gi23903	Homo sapiens	63kDa protein kinase	1141	97
651	911	gi32456	Homo sapiens	protein-tyrosine phosphatase	2591	100
652	912	gi1136743	Homo sapiens	human P5	212	46
653	9163	Y34129	Homo sapiens	Human potassium channel K+Hnov28.	377	71
654	9164	Y41324	Homo sapiens	Human secreted protein encoded by gene 17 clone HNFIY77.	1083	99
655	9173	gi6851256	Mus musculus	protein tyrosine phosphatase-like protein PTPLB	631	93
656	9187	Y66721	Homo sapiens	Membrane-bound protein PRO511.	1173	95
657	9190	W40378	Homo sapiens	Human breast cancer protein CH14-2a16-1 from 2.0 kB DNA fragment #2.	792	81
658	9194	Y02781	Homo sapiens	Human secreted protein.	462	70
659	9210	G02994	Homo sapiens	Human secreted protein,	166	80

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith - Water man Score	% Identity
660	9222	G02520	Homo sapiens	Human secreted protein,	186	43
661	9230	gi67065 54	Homo sapiens	inositol 1,4,5-trisphosphate 3-kinase B	1315	95
662	9258	gi52214 5	Homo sapiens	B-cell growth factor	120	56
663	9260	G04072	Homo sapiens	Human secreted protein,	138	51
664	9271	gi66900 95	Homo sapiens	tetraspanin protein	317	67
665	9272	gi16304 2	Bos taurus	factor activating exoenzyme S	444	72
666	9275	gi40177 4	Homo sapiens	ribosomal protein S6 kinase 3	424	81
667	930	G02355	Homo sapiens	Human secreted protein,	167	41
668	9304	gi89797 43	Canis familiaris	Band4.1-like5 protein	1493	93
669	9346	gi27389 89	Mus musculus	high mobility group protein homolog HMG4	384	89
670	9347	gi36613	Homo sapiens	serine/threoni ne protein kinase	199	91
671	935	gi55418 70	Homo sapiens	QA79 membrane protein, allelic variant airm-1b	334	57
672	9350	gi33271 24	Homo sapiens	KIAA0655 protein	757	87
673	9351	W57260	Homo sapiens	Human semaphorin Y.	573	95
674	9356	gi59977	Human endogenous retrovirus	tripartite fusion transcript PLA2L	127	59
675	9363	Y17834	Homo sapiens	Human PRO361 protein sequence.	968	92
676	9366	gi72431	Homo sapiens	KIAA1374	649	96

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
		29		protein		
677	9369	G03793	Homo sapiens	Human secreted protein,	222	69
678	9378	gi4468311	Homo sapiens		163	39
679	9393	gi2738989	Mus musculus	high mobility group protein homolog HMG4	384	89
680	9444	G01399	Homo sapiens	Human secreted protein,	157	93
681	9467	gi4454702	Homo sapiens	HSPC007	230	71
682	9486	gi10047243	Homo sapiens	KIAA1584 protein	605	93
683	949	Y30895	Homo sapiens	Human secreted protein fragment encoded from gene 25.	704	99
684	9499	W36002	Homo sapiens	Human Fchd531 gene product.	2173	96
685	9510	gi1665799	Homo sapiens		867	83
686	9523	Y53022	Homo sapiens	Human secreted protein clone qf116_2 protein sequence	1252	89
687	9534	Y66670	Homo sapiens	Membrane-bound protein PRO1180.	998	100
688	9539	Y76144	Homo sapiens	Human secreted protein encoded by gene 21.	633	100
689	954	G02490	Homo sapiens	Human secreted protein,	160	78
690	9546	gi181121	Homo sapiens	chorionic somatomammotropin	616	96
691	955	gi7243103	Homo sapiens	KIAA1361 protein	2042	100
692	9551	gi17723	Homo sapiens	ras-related	341	57

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces- sion No.	Species	Description	Smith- Water man Score	% Identity
		45		GTP-binding protein		
693	9558	W88403	Homo sapiens	Human adult testis secreted protein ga63_6.	2252	100
694	9561	gi66900 17	Herpesvirus papio	NTR	100	30
695	957	Y86260	Homo sapiens	Human secreted protein HELHN47,	319	78
696	9572	gi97294 0	Mus musculus	Elf-1	806	92
697	9576	gi32490 05	Homo sapiens	geminin	448	98
698	9586	gi28872 88	Homo sapiens	mRNA cleavage factor I 25 kDa subunit	208	100
699	9587	G00995	Homo sapiens	Human secreted protein,	726	99
700	9592	gi49527 3	Rattus norvegicus	ribosomal protein S15a	202	78
701	9595	gi77999 12	Homo sapiens	UBASH3A protein	453	47
702	9610	Y07875	Homo sapiens	Human secreted protein fragment encoded from gene 24.	574	100
703	9634	Y73325	Homo sapiens	HTRM clone 001106 protein sequence.	820	99
704	9639	G00805	Homo sapiens	Human secreted protein,	155	67
705	9647	G03786	Homo sapiens	Human secreted protein,	196	73
706	9653	gi38823 41	Homo sapiens	KIAA0810 protein	523	100
707	9654	G01924	Homo sapiens	Human secreted protein,	469	100
708	9678	Y99376	Homo sapiens	Human PRO1244 (UNQ628) amino	474	100

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Accession No.	Species	Description	Smith-Waterman Score	% Identity
				acid sequence		
709	9709	Y11825	Homo sapiens	Human 5' EST secreted protein	657	100
710	9722	gi7677422	Mus musculus	GTPase Rab37	189	75
711	9731	Y12424	Homo sapiens	Human 5' EST secreted protein	207	100
712	9742	Y57954	Homo sapiens	Human transmembrane protein HTMPN-78.	484	100
713	9749	gi3687829	Homo sapiens	hT41	386	65
714	9755	gi2055295	Homo sapiens	Similar to a C.elegans protein in cosmid C14H10	2583	100
715	9762	G03436	Homo sapiens	Human secreted protein,	176	61
716	9763	gi6180011	Homo sapiens	anaphase-promoting complex subunit 4	1016	100
717	9784	G03570	Homo sapiens	Human secreted protein,	401	96
718	9794	G00803	Homo sapiens	Human secreted protein,	333	69
719	9795	gi2516242	Mus musculus	Rab33B	669	94
720	9798	gi5585999	Homo sapiens	ZID, zinc finger protein with interaction domain	605	96
721	9805	Y25881	Homo sapiens	Human secreted protein fragment encoded from gene 61.	566	96
722	9816	gi532056	Homo sapiens	protein-tyrosine-phosphatase	384	100
723	9830	G00857	Homo sapiens	Human	539	96

SEQ ID NO:	SEQ ID NO: in USSN 09/48 8,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
				secreted protein,		
724	9836	G00914	Homo sapiens	Human secreted protein,	527	100
725	9837	gi26620 99	Homo sapiens	KIAA0409	230	67
726	984	Y29517	Homo sapiens	Human lung tumour protein SAL-82 predicted amino acid sequence.	833	94
727	9849	gi72293 05	Homo sapiens	ZNF264, partial cds	140	90
728	9851	gi52625 60	Homo sapiens	hypothetical protein	369	64
729	9859	gi38819 76	Homo sapiens	hypothetical protein	167	93
730	9863	gi72957 07	Drosophila melanogaster	CG15433 gene product	837	78
731	9888	gi33196 77	Homo sapiens		209	72
732	989	gi45571 43	Rattus norvegicus	zinc finger protein RIN ZF	604	92
733	9919	G01843	Homo sapiens	Human secreted protein,	586	100
734	9922	W67869	Homo sapiens	Human secreted protein encoded by gene 63 clone HHGDB72.	551	93
735	9947	W78239	Homo sapiens	Fragment of human secreted protein encoded by gene 3.	251	78
736	9956	Y36203	Homo sapiens	Human secreted protein #75.	273	77
737	9961	Y99357	Homo sapiens	Human PRO1190 (UNQ604) amino acid sequence	650	99
738	9972	Y12149	Homo sapiens	Human 5' EST secreted protein	284	100
739	9977	gi10039	Homo sapiens	osteoblast	822	98

SEQ ID NO:	SEQ ID NO: in USSN 09/488,725	Acces-sion No.	Species	Description	Smith-Water man Score	% Identity
		439		differentiation promoting factor		

Table 3 - Amino Acids

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
1	740	2	557	FVGRLLRLGEALRLRPDPSGGCRLQPALVGETEMSEKENNFPP LPKFIPVKPCFYQNFSDEIPVEHQVLVKRIYRLWMFYCATLGV NLIACLAWWIGGGSGTNFGLAFVWLLLFTPCGYVCWFRPVYKA FRADSSFNFMAFFFIFRSPVCPDRHPGDWLLRLGRVRLAVGNW ILPVQPGRCRGHA
2	741	305	838	FLGAGADIFCAYLRMSSKQATSPFACAADGEDAMTQDLTSREK EEGSDQHVASHLPLHPIMHNKPHSEELPTLVSTIQQDADWDSV LSSQQRMESENNKLCSLYSFRNTSTSPHKPDEGSRDREIMTSV TFGTPERRKGSLADVVDTLKQKKLEEMTRTEQEDSSCMEKLLS KDWKE
3	742	12	1315	EGYLTGRPTRPVAVRGKSTADLRMMGRSPGFAMQHIVGVPHVL VRRGLLGRDLFMTRTLCSPGPSQPGEKRPEEVALGLHHRLPAL GRALGHSIQQRATSTAKTWWDRYEEFVGLNEVREAQGKVTEAE KVFMVARGLVREAREDLEVHQAKLKEVRDRLDRVSREDSQYLE LATLEHRMLQEEKRLRTAYLRAEDSEREKFSLFSAAVRESHEK ERTRAERTKNWSLIGSVLGALIGVAGSTYVNRVRLQELKALLL EAQKGPVSLQEAIREQASSYSRQQRDLHNLMVDLRGLVHAAGP GQDSGSQAGSPPTRDRDVDVLSAALKEQLSHSRQVHSCLEGLR EQLDGLEKTCSQMAGVVQLVKSAAHPGLVEPADGAMPSFLLEQ GSMILALSDTEQRLEAQVNRNTIYSTLVTCVTFVATLPVLYML FKAS
4	743	112	745	NLPPLTPQPGPRLAGSGPSHWFSPLSLPVASKAPGTMAQALGE DLVQPPELQDDSSSLGSDSELSGPGPYRQADRYGFIGGSSAEP GPGHPPADLIRQREMKWVEMTSHWEKTMSRRYKKVKMQCRKGI PSALRARCWPLLCGAHVCQKNSPGTYQELAEAPGDPQWMETIG RDLHRQFPLHEMFVSPQGHGQQGLLQVLKAYTLYRPEQG
5	744	99	265	LRGMAAAAAGPAASQRFFQSFSDALIDQDPQAALEVGEPFLLP PLPADPPPSSTA

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
6	745	210	758	WACFRSAHCSRHLRNRIFMYLYWDKTRSPVCKGPALREERPQP RLKLEDYKDRLKSGEHLNPDQLEAVEKYEEVLHNLEFAKELQK TFSGLSLDLLKAQKKAQRREHMLKLEAEKKKLRTILQVQYVLQ NLTQEHVQKDFKGGLNGAVYLPSKELDYLIKFSKLTCPERNES LRQTLEGSTV
7	746	48	450	XAGVQMKLEFLQRKFWAATRQCSTVDGPCTQSCEDSDLDCFVI DNNGFILISKRSRETGRFLGEVDGAVLTQLLSMGVFSQVTMYD YQAMCKPSSHHHSAAQPLVSPISAFLTATRWLLQELVLFLLEW SVWGSX*
8	747	1	469	CRGRLAQLEEAAVAATMSAGDAVCTGWLVKSPPERKLQRYAWR KRWFVLRRGRMSGNPDVLEYYRNKHSSKPIRVIDLSECAVWKH VGPSFVRKEFQNNFVFIVKTTSRTFYLVAKTEQEMQVWVHSIS QVCNLGHLEDGAADSMESLSYTRSYLQ
9	748	242	409	IPAVPLTSCVTVGSYSLSVRDYDPRQGDTVKHYKIRTL\DKRG FYISP\RSTFSTLQ
10	749	1	1146	KDSVLNIARGKKYGEKTKRVSSRKKPALKC/TSQKQPALKAIC DKEDSVPNTATEKKDEQISGTVSSQKQPALKATSDKKDSVSNI PTEIKDGQQSGTVSSQKQPAWKATSVKKDSVSNIATEIKDGQI \RGTVSSQRQPALKA\TGDEKDSVSNIAREIKDGEKSGTVSPQ KQSAQKVIFKKKVSLLNIATRITGGWKSGTEYPENLPTLKATI ENKNSVLNTATKMKDVQTSTPEQDLEMASEGEQKRLEEYENNQ PQVKNQIHSRDDLDDIIQSSQTVSEDGDSLCCNCKNVILLIDQ HEMKCKDCVHLLKIKKTFCLCKRLTELKDNHCEQLRVKIRKLK NKASVLQKRLSEKEEIKSQLKHETLELEKELCSLRFAIQQ
11	750	3	892	SPLRYRAGQSGSTISSSSCAMWRCGGRQGLCVLRRLSGGHAHH RAWRWNSNRACERALQYKLGDKIHGFTVNQVTSVPELFLTAVK LTHDDTGARYLHLAREDTNNLFSVQFRTTPMDSTGVPHILEHT VLCGSQKYPCRDPFFKMLNRSLSTFMNAFTASDYTLYPFSTQN PKDFQNLLSVYLDATFFPCLRELDFWQEGWRLEHENPSDPQTP LVFKGVVFNEMKGAFTDNERIFSQHLQNRLLPDHTYSVVSGGD PLCIPELTWEQLKQFHATHYHPSNARFFTYGNFPLDQH
12	751	367	856	RGAKAKSAVLPPGPPCSSILILSPPAPLTPRSPGTEATRPTAM SKSLKKKSHWTSKVHESVIGRNPEGQLGFELKGGAENGQFPYL GEVKPGKVAYESGSKLVSEELLLEVNETPVAGLTIRDVLAVIK HCKDPLRLKCVKQGESSGLLSVLPGGGTARGAGQ
13	752	144	442	SHRPQPDAWRQGNAFQCVQKEKMQVSSAEVRIGPMRLTQDPIQ VLLIFAKEDSQSDGFWWACDRAGYRCNIARTPESALECFLDKH HEIIVIDHRQTQN
14	753	1	581	FRLAGCGHLLVSLLGLLLLLARSGTRALVCLPCDESKCEEPRN CPGSIVQGVCGCCYTCASQRNESCGGTFGIYGTCDRGLRCVIR PPLNGDSLTEYEAGVCEDENWTDDQLLGFKPCNENLIAGCNII NGKCECNTIRTCSNPFEFPSQDMCLSALKRIEEEKPDCSKARC EVQFSPRCPEDSVLIEGYAPP

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
15	754	1	219	FRMAANVGSMFQYWKRFDLQQLQRELDATATVLANRQDESEQS RKRLIEQSREFKKNTPEVRRVTIVFALKGS
16	755	313	562	ETLSCRIMDHPSREKDERQRTTKPMAQRSAHCSRPSGSSSSSG VLMVGPNFRVGKKIGCGNFGELRLGEGLPQVYYFGPCGKY
17	756	273	574	GCCKD*HSGVIGRSWAMLFASGGFQVKLYDIEQQQIRNALENI RWASRRSPEGMEVGLFLSVGLVCHILKAMRICDVTFSSDGYCS ASELVKARPTVAGM
18	757	3	390	NSRVDDFVSARPKPRPLPRARGMVVVTGREPDSRRQDGAMSSS DAEDDFLEPATPTATQAGHAL/PPAAT/GSFLRLFPLTSEGLT SLHACPHCGATKTPCWQPCSVGGTTSPRTPRAGTSSTEMAHTL EMC
19	758	98	461	RALWVGGCSGEACGIGMSGLLTDPEQRAQEPRYPGFVLGLDVG SSVIRCHVYDRAARVCGSSVQKVENLYPQIGWVEIDPDVLWIQ FVAVIKEAVKAAGIQMNQIVGLGISTQRATFITWN
20	759	100	731	GLAAEQSMQFVKLWCGCSGEFPTRLRRRTPLTEAMEGGPAVCC QDPRAELVERVAAIDVTHLEEADGGPEPTRNGVDPPPRARAAS VIPGSTSRLLPARPSLSARKLSLQERPAGSYLEAQAGPYATGP ASHISPRAWRRPTIESHHVAISDAEDCVQLNQYKLQSEIGKGA YGVVRLAYNESEDRHYAMKVLSKKKLLKQYGFPRRPPP
21	760	2	520	FVYGKPVTLWPTISSVVPSTFLGLGNYEVEVEAEPDVRGPEIV TMGENDPPAVEAPFSFRSLFGLDDLKISPVAPDADAVAAQILS LLPLKFFPIIVIGIIALILALAIGLGIHFDCSGKYRCRSSFKC IELIARCDGVSDCKDGEDEYRCVRVGGQNAALQVFTAASRKTM
22	761	158	470	SLAMPFGCVTLGDKKNYNQPSEVTDRYDLGQVIKTEEFCEIFR AKDKTTGKLHTCKKFQKRDGRKVRKAAKNEIGILKMVKHPNIL QLVDVFVTRKEYFIFLEL
23	762	1	749	QRRRFRAGLWGGHGLTDGLRRNGGCGCSARVPRVGERLRGHRC PDPLCLLLDMLFLSFHAGSWESWCCCCLIPADRPWDRGQHWQL EMADTRSVHETRFEAAVKVIQSLPKNGSFQPTNEMMLKFYSFY KQATEGPCKLSRPGFWDPIGRYKWDAWSSLGDMTKEEAMIAYV EEMKKIIETMPMTEKVEELLRVIGPFYEIVEDKKSGRSSDITS DLGNVLTSTPNAKTVNGKAESSDSGAESEEEEAC
24	763	3	558	SCFKGRTGGRSGSSGDSSRWARCGRHFSASTEEPPLSQPCSAL PRSGRRGCAVPSSVTKMLSFFRRTLGRRSMRKHAEKERLREAQ RAATHIPAAGDSKSIITCRVSLLDGTDVSVDLPKKAKGQELFD QIMYHLDLIESDYFGLRFMDSAQVAHWLDGTKSIKKQVKIGSP YCLHLRVKFYSS
25	764	9	424	ESRERSGNRRGAEDRGTCGLQSPSAMLGAKPHWLPGPLHSPGL PLVLVLLALGAGWAQEGSEPVLLEGECLVVCEPGRAAAGGPGG AALGEAPPGRVAFAAVRSHHHEPAGETGNGTSGAIYFDQVLVN EGGGFDRAS

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26	765	2	507	EDVKSYYTVHLPQLENINSGETRTISHFHYTTWPDFGVPQSPA SFLNFLFKVRESGSLNPDHGPVVIHRSAGTGRSSTFSVVHTCL VLMEKGDDINIKQVLLNIRKFQMGLI\QTPDQLRFSYMAITEG AKCVKGDSSIQKRWKELSKE/DLPPAFDHSPNKIMTEKYNR
27	766	84	852	LNRQRCGDQVLVPGTGLAAILRTLPMFHDEEHARARGLSEDTL VLPPASRNQRILYTVLECQPLFDSSDMTIAEWVCLAQTIKRHY EQYHGFVVIHGTDTMAFAASMLSFMLENLQKTVILTGAQVPIH ALWSDGRENLLGALLMAGQYVIPEVCLFFQNQLFRGNRATKVD ARRFAAFCSPNLLPLATVGADITINRELVRKVDGKAGLVVHSS MEQDVGLLRLYPGIPAALVRAFLQPPLKGVVMETFGSGNG
28	767	992	210	LFRLAPGFLRSLARQGYHQIWAFPFLPSGATATWPAASRSRSL AARSLPRSPARPGPNDALLGEHDFRGQGVRAQRFRFSEEPGPG ADGAVLEVHVPQIGAGVSLPGILAAKCGAEVILSDSSELPHCL EVCRQSCQMNNLPHLQVVGLTWGHISWDLLALPPQDIILASDV FFEPEDFEDILATIYFLMHKNPKVQLWSTYQVRSADWSLEALL YKWDMKCVHIPLESFDADKEDIAESTLPGRHTVEMLVISFAKD SL
29	768	23	624	SFIYKHTHRARFGPRAIVASPALTAGPHVSLTASCRVGMWVSC SPSPFLHPTNTLVAVLERDTLGIREVRLFNAVVRWSEAECQRQ QLQVTPENRRKVLGKALGLIRFPLMTIEEFAAGNRARAQGLVW EGSGTQVGIW/CTEDSAPEFTAESLADAWHIQIGRNLACEDAS T/WAIC*PRPGSVPTVHTARPRLSCLSSCF
30	769	100	2	MASTQDAELAVSRXRAIALXPGXQSXXPSQKKK
31	770	158	1957	LLKSCGVLLSGVCIPCEGKGPTVLVIQTAVPQDRPTKSSMRSA AKPWNPAIRAGGHGPDRVRPLPAASSGMKSSKSSTSLAFESRL SRLKRASSEDTLNKPGSTAASGVVRLKKTATAGAISELTESRL RSGTGAFTTTKRTGIPAPREFSVTVSRERSVPRGPSNPRKSVS SPTSSNTPTPTKHLRTPSTKPKQENEGGEK\VRLSPK/FRELL AEAKAKDSEINRLRSELKKYKEKRTLNAEGTDALGPNVDGTSV SPGDTEPMIRALEEKNKNFQKELSDLEEENRVLKEKLIYLEHS PNSEGAASHTGDSSCPTSITQESSFGSPTGNQLSSDIDEYKKN IHGNALRTSGSSSSDVTKASLSPDASDFEHITAETPSRPLSST SNPFKSSKCSTAGSSPNSVSELSLASLTEKIQKMEENHHSTAE ELQATLQELSDQQQMVQELTAENEKLVDEKTILETSFHQHRER AEQLSQENEKLMNLLQERVKNEEPTTQEGKIIELEQKCTGILE QGRFEREKLLNIQQQLTCSLRKVEEENQGALEMIKRLKEENEK LNEFLELERHNNNMMAKTLEECRVTLEGLKMENGSLKSHLQG
32	771	203	514	SQMHRLIFVYTLICANFCSCRDTSATPQSASIKALRNANLRRD ESNHLTDLYRRDETIQVKGNGYVQSPRFPNSYPRNLLLTWRLH SQENTRIQLVFDNQFGL

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33	772	59	713	PFKKMTDLLRSVVTVIDVFYKYTKQDGECGTLSKGELKELLEK ELHPVLKNPDDPDTVDVIMHMLDRDHDRRLDFTEFLLMIFKLT MACNKVLSKEYCKASGSKKHRRGHRHQEEESETEEDEEDTPGH KSGYRHSSWSEGEEHGYSSGHSRGTVKCRHGSNSRRLGRQGNL SSSGNQEGSQKRYHRSSCGHSWSGGKDRHGSSSVELRERINKS HIK
34	773	209	601	VPKISGPDHIDFIPWDQLFMASSSSVTEFLVLGFSSLGELQLV LFAVFLCLYLIILSGNIIIISVIHLDHSLHTPMYFFLGILSIS EIFYTTVILPKMLINLFSVFRTLSFVSCATQMFYEIVGPGTQE R
35	774	373	987	DHSTETPGIPAAEPVSHGTGKLERAPTLPAGAELPAPAAVPCP TL*VC/LYPQLLGLSVATMVTLTYFGAHFAVIRRASLEKNPYQ AVHQWGTQQRLIQHPESGSEGQSLLGPLRAFSAGLSLVGLLTL GAVLSAAATVREAQGLMAGGFLCFSLAFCAQVQVVFWRLHSPT QVEDAMLDTYDLVYEQAMKGTSHVRRQELAAIQ
36	775	102	466	QPGYSEYDKNRGQGMLLNMMCGRQLSAISLCLAVTFAPLFNAQ ADEPEVIPGDSPVAVSEQGEALPQAQATAIMAGIQPLPEGAAE KARTQIESQLPAGYKPVYLNQLQLLYAARGISCSV
37	776	2	430	RTRAADVYVFSLTGKSRNVSSSTVRRSAVGGMSALALFDLLKP NYALATQVEFTDPEIVAEYITYPSPNGHGEVRGYLVKPAKMSG KTPAVVVVHENRGLNPYIEDVARRVAKAGYIALAPDGLSSVGG YPGNDIKVVSAAA
38	777	106	556	VKQRHGNSLLTTETKCISCRLGVPLSPQRRFQAIRIEEVKLRW FAFLIVLLAGCSSKHDYTNPPWNAKVPVQRAMQWMPISQKAGA AWGVDPQLITAIIAIESGGNPNAVSKSNAIGLMQLKASTSGRD VYRRMGWSGEPTTSELKNSSR
39	778	3	892	HAAGIRHEAKPKRSFYAARDLYKYRHQYPNFKDIRYQNDLSNL RFYKNKIPFKPDGVYIEEVLSKWKGDYEKLEHNHTYIQWLFPL REQGLNFYAKELTTYEIEEFKKTKEAIRRFLLAYKMMLEFFGI KLTDKTGNVARAVNWQERFQHLNESQHNYLRITRILKSLGELG YESFKSPLVKFILHEALVENTIPNIKQSALEYFVYTIRDRRER RKLLRFAQKHYTPSENFIWGPPRKEQSEGSKAQKMSSPLASSH NSQTSMHKKAKDSKNSSSAVHLNSKTAEDKKVAPKEPV
40	779	123	395	ELQVFQPIGGMSDSGSQLGSMGSLTMKSQLQITVISAKLKENK KNWFGPSPYVEVTVDGQSKKTEKCNNTNSPKWKQPLTVIVTPV SKLH
41	780	173	438	IETLSFVIRNWNTHAMSKPIVMERGVKYRDADKMALIPVKNVA TEREALLRKPEWMKIKLPADSTRIQGIKAAMRKNGLHSVCEEA SC
42	781	287	393	PRMVLGKPQTDPTLEWFLSHCHIHKYPSKSTLIPQ
43	782	119	556	GLRISVQERIKACFTESIQTQIAAAEALPDAISRAAMTLVQSL LNGNKILCCGNGTSAANAQHFAASMINRFETERPSLPAIALNT DNVVLTAIANDRLHDEVYAKQVRALGHAGDVLLAISTRGNSRD IVKAVEAAVTRDTTIV

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44	783	248	554	KQTQHAPGMMKKYLALALIAPLLISCSTTKKGDTYNEAWVKDT NGFDILMGQFAHNIENIWGFKEVVIAGPKDYVKYTDQYQTRSH INFDDGTITIEPIPGT
45	784	77	311	TDRTALNPGQESAMNRLFSGRSDMPFALLLLAPSLLLLGGLVA WPMVSNIEISFLRLPLNPNIESTFVGVSNYVRILS
46	785	184	627	KELVDEKSERGRAMDPVSQLASAGTFRVLKEPLAFLRALELLF AIFAFATCGGYSGGLRLSVDCVNKTESNLSIDIAFAYPFRLHQ VTFEVPTCEGKERQKLALIGDSSSSAEFFVTVAVFAFLYSLAA TGRYIFFHNKNRENNRGPL
47	786	3	742	LGTVSYGADTMDEIQSHVRDSYSQMQSQAGGNNTGSTPLRKAQ SSAPKVRKSVSSRIHEAVKAIVLCHNVTPVYESRAGVTEETEF AEADQDFSDENRTYQASSPDEVALVQWTESVGLTLVSRDLTSM QLKTPSGQVLSFCILQLFPFTSESKRMGVIVRDESTAEITFYM KGADVAMSPIVQYNDWLEEECGNMAREGLRTLVVAKKALTEEQ YQDFEVSRLPGIPSSYDGAFLTLKLVLPVFV
48	787	864	335	EGPHR\RLFQMVKA/LQEAPEDPNQILIGYSRGLVVIWDLQGS RVLYHFLSSQQLENIWWQRDGRLLVSCHSDGSYCQW\PVSSEA QQPEPLRSLVPYGPFPCKAITRILWLTTRQGLPFTIFQGGMPR ASYGDRHCISVIHDGQQTAFDFTSRVIGFTVLTEADPAASRRA SGVGAQG
49	788	410	951	KQGLEVRDLHFKEITSGRALLRVACKRPSMVPGGQLQRAGAGA QARITGLSPALWGARVHGWIPELPAGLPPGACLWPLIPACPSR HWGWVSAPVKG/WAQAILGLALCL/RGEHRGLGAGVSKVRSLK MDRKVWTETLIEVGMPLLATDTWGLPHSTAVWVSQPPPYLSDH STLELERDPL
50	789	1	437	LSCNSEQALLSLVPVQRELLRRRYQSSPAKPDSSFYKGLGTCP SQLRLSEPPPTPRHLSVASVSHHMFPSHRSLCPHLPDFFAAPF PSDNLPYTLQSPFPSPPPATPSDHALILHH\DLNGGPDDPLQQ TGQLFGGLVRDIRRRYP
51	790	1	198	SPSSKLVGMWWAGRAGSSRTTSVSLLCLP/SAPFGASNLLVNP LEPQNADKIKIKIADLGNACWVV
52	791	3	435	RVDPRVRAPRCGDKIKNHMY\KCDCGSLKDCASDRCCETSCTL SLGSVCNTGLCCHKCKYAAPGVVCRDLGGICDLPEYCDGKKEE CPNDIYIQDGTPCSAVSVCIRGNCSDRDMQCQALFGYQVKDGS PACYRKLNRIGNRFGT
53	792	1	728	PGRPTRPDASLAQ/DPRTTMFRIPEFKWSPMHQRLLTDLLFAL ETDVHVWRS\HSTKSVMDFVNSNENIIFVHNTIHLISQMVDNI IIACGGILPLLSAATSPTGSKTELENIEVTQGMSAETAVTFLS RLMAMVDVLVFASSLNFSEIEAEKNMSSGGLMRQCLKLVCCVA VRNCLECRQRQRDRGNKSSHGSSKPQEVPQSVTATAASKTPLE NVPGNLSPIKDPDRLLQDVDINRLRAVVF

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54	793	2230	990	NSSGVKLLQALGLSPGNGKDHSILHSRNDLEEAFIHFMGKGAA AERFFSDKETFHDIAQVASEFPGAQHYVGGNAALIGQKFAANS DLKVLLCGPVGPKLHELLDDNVFVPPESLQEVDEFHLILEYQA GEEWGQLKAPHANRFIFSHDLSNGAMNMLEVFVSSLEEFQPDL GGLSGLHMMEGQSKELQRKRLLEVVTSISDIPTGIPV\HLELG \SMTNRELMSSIV\LQQVFPAVTSLGLNEQELLFLTQSASGPH SSLSSWNGVPDVGMVSDILFWILKEHGRSKSRASDLTRIHFHT LVYHILATVDGHWANQLAAVAAGARVAGTQACATETIDTSRVS LRAPQEFMTSHSEAGSRIVLNPNKPVVEWHREGISFHFTPVLV CKDPIRTVGLGDAISAEGLFYSEVHPHY
55	794	249	3	DDSSGWGLEQLVVRWSLALWPRLECSGMISAHCNLCL/LGSSD SPASAPRVAGITDVCHHAWLVFVFLVVMGFPHVGHVGLELL
56	795	2	1176	LGEVLKCQQGVSSLAFALAFLQRMDMKPLVVLGLPAPTAPSGC LSFWEAKAQLAKSCKVLVDALRHNAAAAVPFFGGGSVLRAAEP APHASYGGIVSVETDLLQWCLESGSIPILCPIGETAARRSVLL DSLEVTASLAKALRPTKIIFLNNTGGLRDSSHKVLSNVNLPAD LDLVCNAEWVSTKERQQMRLIVDVLSRLPHHSSAVITAASTLL TELFSNKGSGTLFKNAERMLRVRSLDKLDQGRLVDLVNASFGK KLRDDYLASLRPRLHSIYVSEGYNAAAILTMEPVLGGTPYLDK FVVSSSRQGQGSGQMLWECLRRDLQTLFWRSRVTNPINPWYFK HSDGSFSNKQWIFFWFGLADIRDSYELVNHAKGLPDSFHKPAS DPGS
57	796	755	374	YHAPALQPGQQSKTLSQEKKNFFRPGAVAHTCNPSTLGGRGGR ITRSGDRDHPG*HGETPSLLKIQKKLAGRDGGRL*SQLLGRLR QENGVNPGGGGCSEPRLRHCTPAW*QSETISRKKRKKERKY
58	797	2	476	FRPIGIIRQALCSADGHQRRILTLRLGLLVIPFLPASNLFFRV GFVVPSVGCCVMLLFGFG/ALRKHTEKKKLIAAVVLGILLS/N DAERLRCAVRGGEWRSE/EAVFRGAVSVCPLSAEVRCNIGRNL AAKGNQTGAIRYHREAVSLNPKTKSSTREFRPC
59	798	3	711	KIADFGFSNLFTPGQLLKTWCGSPPYAAPELFEGKEYDGPKVD IWSLGVVLYVLVCGALPFDGSTLQNLRARVLSGKFRIPFFMST ECEHLIRHMLVLDPNKRLSMEQICKHKWMKLGDADPNFDRLIA ECQQLKEERQVDPLNEDVLLAMEDMGLDKEQTLQSLRSDAYDH YSAIYSLLCDRHKRHKTLRLGALPSMPRALGLSSTSQYP\AEQ AGTAMNISVPQVQLINPENQIV
60	799	2	344	AREFLGHRASITWS*ARVHHRFPKAEVA*P/SLLRTDLTEDRT KCCHGDLLECADDRADLVEDIWENQDSISTILIECCEKPLLEK SHCIAEVENDEMPADLPSLAADFVESKDV

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61	800	142	594	VPPKMKRGTSLHSRRGKPEAPKGSPQINRKSGQEMTAVMQSGR PRSSSTTDAPTGSAMMEIACAAAAAAAACLPGEEGTAERIERL EVSSLAQTSSAVASSTDGSIHTDSVDGTPDPQRTKAAIAHLQQ KILKLTEQIKIAQTARRNRRPGS*KDCTP*KCLRKSDEALNRV LQQI\RVPPKMKRGTSLHSRRGKPEAPKGSPQINRKSGQEMTA VMQSGRPRSSSTTDAPTGSAMMEIACAAAAAAAACLPGEEGTA ERIERLEVSSLAQTSSAVASSTDGSIHTDSVDGTPDPQRTKAA IAHLQQKILKLTEQIKIAQTARRNRRPG
62	801	232	1299	MQTIERLVKERDDLMSALVSVRSSLADTQQREASAYEQVKQVL QISEEANFEKTKALIQCDQLRKELERQAERLEKELASQQEKRA IEKDMMKKEITKEREYMGSKMLILSQNIAQLEAQVEKVTKEKI SAINQLEEIQSQLASREMDVTKVCGEMRYQLNKTNMEKDEAEK EHREFRAKTNRDLEIKDQEIEKLRIELDESKQHLEQEQQKAAL AREECLRLTELLGESEHQLHLTRQEKDSIQQSFSKEAKAQALQ AQQREQELTQKIQQMEAQHDKTENEQYLLLTSQNTFLTKLKEE CCTLAKKLEQISQKTRSEIAQLSQEKRYTYDKLGKLQRRNEEL EEQCVQHGRST*
63	802	3	334	SYPVWWNSPLTAEVPPELLAAAGFFHTGHQDKVRCFFCYGGLQ SWKRGDDPWTEHAKWFPSCQFLLRSKGRDFVHSVQETHSQLLG SWDPWEEPEDAAPVAPSVPASGYPELPTPRREVQSESAQEPGG VSPAEAQRAWWVLEPPGARDVEAQLRRLQEERTCKVCLDRAVS IVFVPCGHLVC\AECAPGLQLCPI\CRSPCGPLRPCLWVP
64	803	70	456	MCSYREKKAEPQELLQLDGYTVDYTDPQPGLEGGRAFFNAVKE GDTVIFASDDEQDRILWVQAMYRATGQSHKPVPPTQVQKLNAK GGNVPQLDAPISQFYADRAQKHGMDEFISSNPCNFDHASLFEM *
65	804	2	1376	KQLIVLGNKVDLLPQDAPGYRQRLRERLWEDCARAGLLLAPGH QGPQRPVKDEPQDGENPNPPNWSRTVVRDVRLISAKTGYGVEE LISALQRSWRYRGDVYLVGATNAGKSTLFNTLLESDYCTAKGS EAIDRATISPWPGTTLNLLKFPICNPTPYRMFKRHQRLKKDST QAEEDLSEQEQNQLNVLKKHGYVVGRVGRTFLYSEEQKDNIPF EFDADSLAFDMENDPVMGTHKSTKQVELTAQDVKDAHWFYDTP GITKENCILNLLTEKEVNIVLPTQSIVPRTFVLKPGMVLFLGA IGRIDFLQGNQSAWFTVVASNILPVHITSLDRADALYQKHAGH TLLQIPMGGKERMAGFPPLVAEDIMLKEGLGASEAVADIKFSS AGWVSVTPNFKDRLHLRGYTPEGTVLTVRPPLLPYIVNIKGQR IKKSVAYKTKKPPSLMYNVRKKKGKINV
66	805	1	874	STVASMMHRQETVECLRKFNARRKLKGAILTTMLVSRNFSAAK SLLNKKSDGGVKPQSSNNKNSLVSPAQEPAPLQTAMEPQTTVVH NATDGIKGSTESCNTTTEDEDLKAAPLRTGNGSSVPEGRSSRD RTAPSAGMQPQPSLCSSAMRKQEIIKITEQLIEAINNGDFEAY TKICDPGLTSFEPEALGNLVEGMDFHKFYFENLLSKNSKPIHT TILNPHVHVIGEDAACIAYIRLTQYIDGQGRPSNPAKSEE\TR VWH\RR\DGKWLNVHYHCSGAPCPHRCSELSHRGF

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
67	806	3	1714	LPKNVVFVLDSSASMVGTKLRQTKDALFTILHDLRPQDRFSII GFSNRIKVWKDHLISVTPDSIRDGKVYIHHMSPTGGTDINGAL QRAIRLLNKYVAHSGIGDRRVSLIVFLTDGKPTVGETHTLKIL NNTREAARGQVCIFTIGIGNDVDFRLLEKLSLENCGLTRRVHE EEDAGSQLIGFYDEIRTPLLSDIRIDYPPSSVVQATKTLFPNY FNGSEIIIAGKLVDRKLDHLHVEVTASNSKKFIILKTDVPVRP QKAGKDVTGSPRPGGDGEGDTNHIERLWSYLTTKELLSSWLQS DDEPEKERLRQRAQALAVSYRFLTPFTSMKLRGPVPRMDGLEE AHGMSAAMGPEPVVQSVRGAGTQPGPLLKKPYQPRIKISKTSV DGDPHFVVDFPLSRLTVCFNIDGQPGDILRLVSDHRDSGVTVN GELIGAPAPPNGHKKQRTYLRTITILINKPERSYLEITPSRVI LDGGDRLVLPCNQSVVVGSWGLEVSVSANANVTVTIQGSIAFV ILIHLYKKPAPFQRHHLGFYIANSEGLSSNCRVFCESGILIQE LTQQSVAVAGR
68	807	2	841	FFLEQVSQYTFAMCSYREKKSEPQELMQLEGYTVDYTDPHPGL QGGCMFFNAVKEGDTVIFASDDEQDRILWVQAMYRATGQSYKP VPAIQTQKLNPKGGTLHADAQLYADRFQKHGMDEFISANPCKL DHAFLFRILQRQTLDHRLNDSYSCLGWFSPGQVFVLDEYCARY GVRGCHRHLCYLAELMEHSENGAVIDPTLLHYSFAFCAS\HVH GNRPDGIGTVSVEEKERFEEIKERLSSLLENQISHFRYCFPFG RPEGALKATLSLLERVLMKDIA
69	808	2	757	DGLLHEVLNGLLDRPDWEEAVKMPVGILPCGSGNALAGAVNQH GGFEPALGLDLLLNCSLLLCRGGGHPLDLLSVTLASGSRCFSF LSVAWGFVSDVDIQSERFRALGSARFTLGTVLGLATLHTYRGR LSYLPATVEPASPTPAHSLPRAKSELTLTPDPAPPMAHSPLHR SVSDLPLPLPQPALASPGSPEPLPILSLNGGGPELAGDWGGAG DAPLSPDPQLSSPPGSPKAALHSPV*KKAPVIPPDM
70	809	3	530	KGVPTLLMAAGSFYDILAITGFNTCLGIAFSTGSTVFNVLRGV LEVVIGVATGSVLGFFIQYFPSRDQDKLVCKRTFLVLGLSVLA VFSSVHFGFPGSGGLCTLVMAFLAGMGWTSEKAEVEKIIAVAW DIFQPLLFGLIG\AEVSI\SSLRPETVGLCVATVGI\AVLIRI FDYIF
71	810	228	541	LLKEVVVQASPVCKTCCSQLVRTPVTFTEVQNV/CRCSAGYLI SVCSYTSSDHNQCYAGTASLALLWIGGILKGCLLWKQFRWTER SHWNFGYWALWSPGNGNGC
72	811	173	404	ICTSTYLQIFPGKPSCFMCKGRLMCIYFILWYLGHYTSLHWNW CRYISDPNVD/ACPDPRNAEVSMTHTVPALMELID
73	812	2	586	LESLPGFKEIVSRGVKVDYLTPDFPSLSYPNYYTLMTGRHCEV HQMIGNYMWDPTTNKSFDIGVNKDSLMPLWWNGSEPLWVTLTK AKRKVYMYYWPGCEVEILGVRPTYCLEYKNVPTDINFANAVSD ALDSFKSGRADLAAIYHERIDVEGHHYGPASPQRKDALKA\VD TVLKYMTKWIQERGLQDRLNVII

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74	813	2	348	ARDFHPKQTLDFLRSDMANSKITEEVKRSIAQQYLDLTVA/LE QVDPDAEVDAAPSTTSSCGH*DSHAGS*RVLSLLGD*GPA*TG ANSMAGKLLLVAWLGFPDPFWGKELSDPAFK
75	814	2	366	KQSGDVTCNCTDGRLAPSCLTCVGHCIFGGYCTMNSKMMPECQ SPPHMTGPRCEEHVFSQHQPGHITSILIPML*LLLLVLVAGVI FCHKRRVQGAKGFQHQRMTNGAMNAQIANPTYKMY
76	815	420	681	TVENAGRWL*EEAEIQAELERLERVRNLHIRELKRINNEDNSQ FKDHPTLNERYLLLHLLGRGGFSEVYKVMYGLFWFFYTNVARI
77	816	37	428	MCEEFLVMGKGCSCVF*ILLSNPQMWWLNDSNPETDNRQESPS QENIDRVSD/MAFVPSAWTASGGVAWGNLGESGSRTGGVRAET LAPRLQV*PAHLRGHPRSNRGQGRPPWKAGKLGKCQEVLFRFA AF
78	817	1	358	FRAMFLAVQHDCRPMDKSAGSGHKSEEKREKMKRTLLKDWKTR LSYFLQNSSTPGKPKTGKKSKQQAFIK*VENPELANINS*LLN *KGEL**A*ANIQNLSCRPSPEEAQLWSEAFDE
79	818	1	169	GFFNFSSPKLKGWKINSSLVLEIRKNILRFLDAERDVSVVKSS FPSKDARHSSVHR*FTQLHWGPPSHTPARP*RGFFNFSSPKLK GWKINSSLVLEIRKNILRFLDAERDVSVVKSSFPSKDARHSSV HR
80	819	55	310	RIDDQQELKRVT*YSQKEYTKKKLHKKCNIIQADIKPDNILDN ESITILKLSDFGSASHVADNDITPSSSQTTSAASSPPRTLRR
81	820	1	134	SSKPWD*SLAPKHSG*TKNMDCYCIIPTCIGRERCYGTCIGDT V
82	821	187	360	NSSKKLVMEHQWKKYLRRNYQRMLNRLITLIGSCGVL*LISTI PTSRLKFLKETGHGTPMEEIPEEELSEDVEQIDHADRELRRGQ NLRCKGIHRLPTHIQVGQN
83	822	208	723	KWMLLHSFKIFCLSLYPQL*CPFEFFSHSATIFHELVYKQTKI ISSNQELIYEGRRLVLEPGRLAQHFPKTTEENPIFVVSREPLN TIGLIYEKISLPKVHPRYDLDGDASMAKAITGVVCYACRIAST LLLYQELMRKGIRWLIELIKDDYNETVHKKTEVVITLGFLVSR
84	823	1	314	GTRKMGPTVSPICLPGTWGDYNLMDGDLGLISGWGRTEKRDRA DRLKAGRSPAAG*RKWEPGRGDPTWEESEEDVHKSKWTRCVDE KGA*C*TDNKRPLRCGVT
85	824	3	302	HELENLIKSAHSYSLY*G*YLHGA*TAEPEASFCPRRGWNRQA GAAGSRMNFRPGVLSSRQLGLPGPPDGPDYTVYYPFHRLAMVT AASRLEREHLTHL
86	825	87	422	PVPLPHPILEVCPGQ*EPQSAISLTAFQVQAGASRASPGPPAP SSSKPGRKAKVASPCPDRPAPPPT*PRPAAAPGSESSPRPPRP RTGRRQQRAHARRAAARTAPWRPSC
87	826	3	289	HEGRRRGWASASQRFLRNWAFLTPSKVRRLKGQKAFGKLPSHS DTSLTSDLGFHHRFNPNASSSFKPSGTKFAIQYGTGRVDGILS EDKLTVSGL
88	827	1	101	GRNIMHYPNGHAICIANGHCIIL*NSHNIKVWV

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89	828	1	535	INLGNTCYMNSVI*ALFMATDFRRQVLSLNLNGCNSLMKKLQH LFAFLAHTQREAYAPRIFFEASRPPWFTPRSQQDCSEYLRFLL DRLHEEEKILKVQASHKPSEILECSETSLQEVASKAAVLTETP RTSDGEKTLIEKMFGGKLRTHIRCLNCTSTSQKVEAFTDLSLA FWPSSS
90	829	1	434	ARDDPRVRLSLSPNFF*LASKLGKQWTPLIILANSLSGTNMGE
91	830	3	782	MHRIKLNDRMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENE GSCHSDQMSNDFSNDDGVDEGICLETNSGTEKISKSGLEKNSL IYELFSVMVHSGSAAGGHYYACIKSFSDEQWYSFNDQHVSRIT QEDIKKTHGGSSGSRGYYSSAFASSTNAYMLIYRLKDPARNAK FLEVDEYPEHIKNLVQKERELEEQEKRQREIERNTCKIKLFCL HPTKQVMMED*IEVHKDKTLKEAVEMAYKMMDLEEVIPLDCCR L
92	831	2	604	SVMPVPALCLLWALAMVTRPASAAPMGGPELAQHEELTLLFHG TLQLGQALNGVYRTTEGRLTKARNSLGLYGRTIELLGQEVSRG RDAAQELRASLLETQMEEDILQLQAEATAEVLGEVAQAQKVLR DSVQRLEVQLRSAWLGPAYREFEVLKAHADKQSHILWALTGHV QRQRREMVAQQHRLRQIQERLHTAALPA
93	832	16	690	ITSVDPRVRGNASTGYGKIWLDDVSCDGDESDLWSCRNSGWGN NDCSHSEDVGVICSDASDMELRLVGGSSRCAGKVEVNVQGAVG ILCANGWGMNIAEVVCRQLECGSAIRVSREPHFTERTLHILMS NSGCAGGEASLWDCIRWEWKQTACHLNMEASLICSAHRQPRLV GADMPCSGRVEVKHAHTWRSVCDSDFSLHAANVLCRELNCGDA ISLSVGDHFG
94	833	108	727	SNYPSSRFRVAGITGVKLGMRSIPIATACTIYHKFFCETNLDA YDPYLIAMSSIYLAGKVEEQHLRTRDIINVSNRYFNPSGEPLE LDSRFWELRDSIVQCELLMLRVLRFQVSFQHPHKYLLHYLVSL QNWLNRHSWQRTPVAVTAWALLRDSYHGALCLRFQAQHIAVAV LYLALQVYGVEVPAEVEA/DEAVGWQIYAMDTEIP
95	834	118	376	RGSRHAVHGWAFGLLFINKESVVMAYLFTTFNAFQGVFIFVFH CALQKKVRSRRGPGSQPPLETFPGYPGEGGEGGGDSGAPSSPQ
96	835	3	333	ARKDDLPPNMRFHEEKRLDFEWTLKAG*EKG*PSK*NKGWEGQ E***TVRD*GIS**VKPQHLS*\ALQMALKRVYTLLSSWNCLE DFDQIFWGQKSALAGQWFPEVSIIP
97	836	740	951	GKQQRETLRRPSPTISVQRAGSPEHSSASH*HSPCPAPGQRVL PTALCTLMTSKHFHGCPLAGQGRAVTL

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98	837	81	1503	GVCGLPRFCGSIILCHYEMSSLGASFVQIKFDDLQFFENCGGG SFGSVYRAKWISQDKEVAVKKLLKIEKEAEILSVLSHRNIIQF YGVILEPPNYGIVTEYASLGSLYDYINSNRSEEMDMDHIMTWA TDVAKGMHYLHMEAPVKVIHRDLKSRNVVIAADGVLKICDFGA SRFHNHTTHMSLVGTFPWMAPEVIQSLPVSETCDTYSYGVVLW EMLTREVPFKGLEGLQVAWLVVEKNERLTIPSSCPRSFAELLH QCWEADAKKRPSFKQIISILESMSNDTSLPDKCNSFLHNKAEW RCEIEATLERLKKLERDLSFKEQELKERERRLKMWEQKLTEQS NTPLLLPLAARMSEESYFESKTEESNSAEMSCQITATSNGEGH GMNPSLQAMMLMGFGDIFSMNKAGAVMHSGMQINMQAKQNSSK TTSKRRGKKVNMALGFSDFDLSEGDDDDDDDGEEEYNDMDNSE
99	838	185	328	MLWETGCSAACRVTVSPTVTFATFSTRGIDAMRPGPSFLWRQQ LSQG*
100	839	1	348	PTLGDQPDLHSITRASRPKLCTRKNCNPLTITVHDPNSTQ*YY GMSWELRFYIPGFDVGTMFTIQKILVSWSPPKPIGPLTDLGDP MFQKPPNKVDLTVPPPFLVIKDTLQKFEKI
101	840	1	416	SLNNVTLPQAKTEKDFIQLCTPGVIKQEKLGTVYCQASSPGAN MIGNKMSAISVHGVSTSGGQMYHYDMNTASLSQQ*DQKPIFNV IPPIPVGSENWNRCQGSGDDNLTSLGTLNFPGRTVSFSFEMES RSVAQAGVQ
102	841	105	354	RHTQECRCPHTHIHTHTHSHTHSHTHSHSHSHTTPRCSHTQPP HAQAPALC*S*EDRGQPTWKLCAHRPRLKVIKEGGWLGG
103	842	171	347	NYSLSVYLVRQLTAGTLLQKLRAKGIRNPDHSRALSE*HLSSL PHLIWIQVFLALQPS
104	843	2	690	ATYIVDFGFSTTFREGQMLTAFCGMYPYVAPERSLGQACQ*PA RDIQSLSVILYFRNTVGRRARTLPFYS/AEASKLQEKILTGRY HAPPLLALQLDSL/IKLLMLNARKCPSL*LMKNPWVKSSQKMP LIPYEEPL/RGPPQTIQLMVAMGFQAKNISVAIIERKFNYPMA TYLILEHTKQERKCSTIRELSLPPGVPTSPSPSTELSTFPLSL MRAHREPAFNVQPPEESQ
105	844	2	777	AKQELAKLMRIEDPSLLNSRVLLHHAKAGTIIARQGDQDVSLH FVLWGCLHVYQRMIDKAEDVCLFVAQPGELVGQLAVLTGEPLI FTLRAQRDCTFLRISKSDFYEIMRAQPSVVLSAAHTVAARMSP FVRQMDFAIDWTAVEAGRALYRCSSHRAAQARPRGGDLGVVRP C*PPRPLRQGDRSDCTYIVLNGRLRSVIQRGSGKKELVGEYGR GDLIGVVSATPTH*PLAFSRPVPRQLTRIIPGNPGSGEVFPGA
106	845	3	709	HASGWTPGTTQTLGQGTAWDTVASTPGTSETTASAEGRRTPGA TRPAAPGTGSWAEGSVKAPAPIPESPPSKSRSMSNTTEGVWEG TRSSVTNRARASKDRREMTTTKADRPREDIEGVRIALDAAKKV LGTIGPPALVSETLAWEILPQATPVSKQQSQGSIGETTPAAGM WTLGTPAADVWILGTPAADVWTSMEAASGEGSAAGDLDAATGD RGPQATLSQTPAV*PWGPPG

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107	846	3	406	AGTSGTGDTGPGNTAVSGTPVVSPGATPGAPGSSTPGEADIGN TSFGKSGTPTVSAASTTSSPVSKHTDAASATAVTISGSKPGTP GTPGGATSGGKITPGIA*PTLDQKSPCFSGYGGYFPVNPHQNP CADSL
108	847	1	565	RAHRCCLPLPSLSCEIQIGFS*SSIFPGQ*ACPCSCCRSCRRN WPQSPRCPHHPPAPCSLLLSSCLPPPLSCSWRGTSGKPPSQSP AASRSMRPRCSPRTSSLRGASCRGPGGSAPAAASGPRCRGCSR SPRRCSRSGCAAASPPRSQRRSPPLSPPPFPTSGTLLLKTSRF GSATRE*SSPRPRPRP
109	848	2	987	DDVPPPAPDLYDVPPGLRRPGPGTLYDVPRERVLPPEVADGGV VDSGVYAVPPPAEREAPAEGKRLSASSTGSTRSSQSASSLEVA GPGREPLELEVAVEALARLQQGVSATVAHLLDLAGSAGATGSW RSPSEPQEPLVQDLQAAVAAVQSAVHELLEFARSAVGNAAHTS DRALHAKLSRQLQKMEDVHQTLVAHGQALDAGRGGSGATLEDL DRLVACSRAVPEDAKQLASFLHGNASLLFRRTKATAPGPEGGG TLHPNPTDKTSSIQSRPLPSPPKFTSQDSPDGQYENSEGGWME DYDYVHLTGGRRSF*KTQKELLGKRAA
110	849	84	372	MATDEENVYGLEENAQSRQESTRRLILVGRTGAGKSATGNSIL GQRRFFSRLGATSVTRACTTGSRRWDKCHVEVVDTPDIFSSQV SKTDPGCEERX*
111	850	2	47	TLGLRSLTKEGGGGGDVAAFEVGTGAAASRALGQCGQLQKLIV IFIGSLCGLCTKCAVSNDLTQQEIQTPEIQQRNA*CDSRVTFT NEGGRWWG
112	851	1192	1040	FFFLVETRFHHIGQAGLELLTLSIK*SARLGLPKCWDDRREPP YLAGFMI
113	852	791	362	RRSPPPAPPPLPSPLSPPPRAPVSPASTMPILLFLIDTSASMN QRSHLGTTYLDTAKGAVETFMKLRARDPASRGDRYMLVTFEEP PYAIKAGWKENHATFMNELKNLQAEGLTTLGQSLRTAFDLLNL NRLVTGIDNYGQVG
114	853	812	348	NCRTYVFCFVLVFRLLFLHGSPLSPSLLSRAGLLCGSAENPTP FLCGITMAAGVSLLALVVRVILSTAILCPSGASRRQRSSEVEW GTDSGVYRLYCWRVGFLGPGGELRLGLSEARGGRVWGRGEKRC RVWAVRSLRKGFGSVAALRRGIWAG
115	854	93	170	VTPTPPQYYTCSCVLGFIACSIFLQMSLKPKVMLLTVALVACL VLFNLSQCWQRDCCSQGLGNLTEPSGTNR*GPAAVSWASLPAP SSCR
116	855	1	183	GKAGGAAGLFAKQVQKKFSRAQEK*TRRFGKTCQPEERAREER QEGPEIEFGFSFFSLSLY

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117	856	53	2400	PKRLFLFQDVNTLQGGGQPVVTPSVQPSLQPAHPALPQMTSQA PQPSVTGLQAPSAALMQVSSLDSHSAVSGNAQSFQPYAGMQAY AYPQASAVTSQLQPVRPLYPAPLSQPPHFQGSGDMASFLMTEA RQHNTEIRMAVSKVADKMDHLMTKVEELQKHSAGNSMLIPSMS VTMETSMIMSNIQRIIQENERLKQEILEKSNRIEEQNDKISEL IERNQRYVEQSNLMMEKRNNSLQTATENTQARVLHAEQEKAKV TEELAAATAQVSHLQLKMTAHQKKETELQMQLTESLKETDLLR GQLTKVQAKLSELQETSEQAQSKFKSEKQNRKQLELKVTSLEE ELTDLRVEKESLEKNLSERKKKSAQERSQAEEEIDEIRKSYQE ELDKLRQLLKKTRVSTDQAAAEQLSLVQAELQTQWEAKCEHLL ASAKDEHLQQYQEVCAQRDAYQQKLVQLQEKSVCFA\CLALQA QITALTKQNEQHIKELEKNKSQMSGVEAAASDPSEKVKKIMNQ VFQSLRREFELEESYNGRTILGTIMNTIKMVTLQLLNQQEQEK EESSSEEEEEKAEERPRRPSQEQSASASSGQPQAPLNRERPES PMVPSEQVVEEAVPLPPQALTTSQDGHRRKGDSEAEALSEIKD GSLPPELSCIPSHRVLGPPTSIPPEPLGPVSMDSECEESLAAS PMAAK\PDNPSGK\VCVQGK*APDGPTYKE\SSTRLFPGFQDP E\EGDPLALGLE\SPG\EPQPPQLQGKVDVH*VPPVPHKGAFQ EQEGRFPQFCRE
118	857	1	791	SETAQQIIDRLRVKLAKEPGANLFLMAVQDIRVGGRQSNASYQ YTLLSDDLAALREWEPKIRKKLATLPELADVNSDQQDNGAEMN LVYDRDTMARLGIDVQAANSLLNNAFGQRQISTIYQPMNQYKV VMEVDPRYTQDISALEKMFVINNEGKAIPLSYFAKWQPANAPL SVNHQGLSAALTISFNLPTGKSLSDASAAIDRAMSQLGVPSTV RGSFAGPAQVFQETMNSQVILIIAAIATVYIVLGIPYERYVHP PTILL*RPGANLFLMAVQDIRVGGRQSNASYQYTLLSDDLAAL REWEPKIRKKLATLPELADVNSDQQDNGAEMNLVYDRDTMARL GIDVQAANSLLNNAFGQRQISTIYQPMNQYKVVMEVDPRYTQD ISALEKMFVINNEGKAIPLSYFAKWQPANAPLSVNHQGLSAAL TISFNLPTGKSLSDASAAIDRAMSQLGVPSTVRGSFAGPAQVF QETMNSQVILIIAAIATVYIVLGIPYERYVHPPTILL
119	858	3	417	IITPDAMGCQKDIAEKIQKQGGDYLFAVKGNQGRLNKAFEEKF PLKELNNPEHDSYAISEKSHGREEIRLHIVCDVPDELIDFTFE WKGLKKLCVAVSFRSIIAEQKKEPEMTVRYNIS*LGIAGDISV TAISGTDD
120	859	2	373	HYLKMLTQARREVIIANAYFFPGYRFLHALRKAARRGVRIKLI IQGEPDMPIVRVGARLLYNYLVKGGVQVFEYRRRPLHGKVALM DDHWATVGSSNLHPVS*SGNLQANVILHVLRVPTLNP
121	860	286	495	CWSKSAAFHSKLATTCIVPVCAAGHCSAAW*SLRPIEALAKEV RELK*HTR*LLNPATTRELTSLGRNLNRLLKSERERYDKYRTT LTDLTHSLKTPLAVLQSTLRSLRSEKMSVSDAEPVMLEQISRI SQQIGYYLHRASMRGGTLLSRELHPVAPLLDNLTSALIKGKPR KGGNVTVFPFTAMYRDGH

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122	861	2	725	GNTVMFQHLMQKRKHTQWTYGPLTSTLYDLTEIDSSGDEQSLL ELIITTKKREARQILDQTPVKELVSLKWKRYGRPYFCMLGAIY LLYIICFTMCCIYRPLKPRTNNRTSPRDNTLLQQKLLQEAYMT PKDDIRLVGELVTVIGAIIILLVEVPDIFRMGVTRFFGQTILG GPFHVLIITYAFMVLVTMVMRLISASGEVVPMSFALVLGWCNV MYFARGFQMLGPFTIMIQKMIFGDLM
123	862	1	135	EKAAAANIDEVQKSDVSSTGQGVIDKDALGPMMLEVAHLHFSA VF
124	863	2	364	LEVPSEVTPLGFAMQATKTLLLRTCCLQEFNIMEKNKGWALLG GKDGHLQGLFLLANALLERNQLLAQKVMYLLVPLLNRGNDKHK LTSAGFFVELLRSPVAKRLPSIYSVARFKDWLQD
125	864	1	374	RPAPAPSAAPEEAPSP\GVKGRGMAKRRVPAPVWGGAGGGTKS ARRAAAAPDTERSEEGGRAVKEAYPSSRQPPPPSP*PLRCARR CHPNLAPSMPISNREGKGKRREEKIRPLSPASTHTSARA
126	865	3	364	LQGVHGSSSTFCSSLSSDFDPLEYCSPKGDPQRVDMQPSVTSR PRSLDSEVPTGETQVSSHVHYHRHRHHHYKKRFQRHGRKPGPE TGVPQSRPPIPRTQPQPEPPSPDQQVTRSNSAAP
127	866	2	250	MADPDPRYPRSSIEDDFNYGSSEASDTVHIRMAFLRRVYSILS LQDLLATVTSTDNLAFEDGRTDWLQRPDCVSFKIHVLPM
128	867	194	375	AGMSVVVVPPIGSSYLGLISQEHFPNEFTSGDGKKAHQDFGYF YGSSYVAASDSSRTPGL
129	868	104	339	VAAALTLFPQQLSPPGAWGLGLSACFCCAEGFSRLNQQVLSSS LLLLSRTNCPCKYSFLDNLKKLTPRRDVPTYPKVR
130	869	2	360	RDDACLYSPASAPEVITVGATNAQDQPVTLGTLGTNFGRCVDL FAPGEDIIGASSDCSTCFVSQSGTSQAAAHVAGIAAMMLSAEP ELTLAELRQRLIHFSAKDVINEAWFPEDQRVLT
131	870	2	105	LEIKFLEQVDQFYDDNFPMEIRHLLAQWIENQDW
132	871	2	466	EAGDADEDEADANSSDCEPEGPVEAEEPPQEDSSSQSDSVEDR SEDEEDEHSEEEETSGSSASEESESEESEDAQSQSQADEEEED DDFGVEYLLARDEEQSEADAGSGPPTPGPTTLGPKKEITDIAA AAESLQPKGYTLATTQVKTPIPLLL
133	872	1	354	LKNLRELLLEDNQLPQIPSGLPESLTELSLIQTNIYNITKEGI SRLINLKNLYLAWNCYFNKVCEKTNIEDGVFETLTNLELLSLS FNSLSHVPPKLPSSLRKLFLSNTQIKYISEED
134	873	59	184	MRSQALGQSAPSLTASLKELSLPRRGSFPVCPNAGRTSPLG*
135	874	1	210	LLCVCLPVGACPSLSLLTAPLNQLMRCLRKYQSRTPSPLLHSV PSEIVFDFEPGPVFRGSWALLSWSTRP
136	875	131	254	QTPDKKQNDQRNRKRKAEPYETSQGSNNFVSTKVLNSNVLR
137	876	84	504	YFIIKGMVELVPASDTLRKIQVEYGVTGSFKDKPLAEWLRKYN PSEEEYEKASENFIYSCAGCCVATYVLGICDRHNDNIMLRSTG HMFHIDFGKFLGHAQMFGSFKRDRAPFVLTSDMAYVINGGEKP TIRFQLFVDL

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138	877	3	215	PSPLPSLSLPPPVAPGGQESPSPHTAEVESEASPPPARPLPGE ARLAPISEEGKPQLVGRF\QVTSSK\NRLSLFPCSQHPPLSLV LQNLQPLSSLQRAQIQRTV/PGGGPETREALAESDRAAEGLGA GVEEEGDDGKEPQVGGSPQPLSHPSPVWMNYSYSSLCLSSEES ESSGEDEEFWAELQSLRQKHLSEVETLQTLQKKEIEDLYSRLG KQPPPGIVAPAAMLSSRQRRLSKGSFPTSRRNSLQRSEPPGPG ETA/GHPASIFSLRPLSVDCFSPGPGGLPRGNRPPLPTSPFLT *CSPSPHTAEVESEASPPPARPLPGEARLAPISEEGKPQLVGR FPSDFIQGTG
139	878	1	337	RRFVSQETGNLYIAKVEKSDVGNYTCVVTNTVTNHKVLGPPTP LILRNDGVMGEYEPKIEVQFPETVPTAKGATVKLECFALGNPV PTIIWRRADGKPIARKARRHKSRVGK
140	879	72	917	MLRTCYVLCSQAGPRSRGWQSLSFDGGAFHLKGTGELTRALLV LRLCAWPPLVTHGLLLQAWSRRLLGSRLSGAFLRASVYGQFVA GETAEEVKGCVQQLRTLSLRPLLAVPTEEEPDSAAKSGEAWYE GNLGAMLRCVDLSRGLLEPPSLAEASLMQLKVTALTSTRLCKE LASWVRRPGASLELSPERLAEAMDSGQNLQVSCLNAEQNQHLR ASLSRLHRVAQYARAQHVRLLVDAEYTSLNPALSLLVAALAVR WNSPGEGGPWVWNTYQACLKDTF*
141	880	219	308	PHHRIAGDTAIDKNIHQSVSEQIKKNFAK
142	881	182	317	QMTNPFFLCFTTMISNCNFFKGPPGPPGEKGDRGPTGESGPRG FP
143	882	177	341	NGIIASFFLRTFIFCFIHIQGCQAGQTIKVQVSFDLLSLMFTF VSPCTNDLIIH
144	883	3	1441	KLSVNHRRTHLTKLMHTVEQATLRISQSFQKTTEFDTNSTDIA LKVFFFDSYNMKHIHPHMNMDGDYINIFPKRKAAYDSNGNVAV AFLYYKSIGPLLSSSDNFLLKPQNYDNSEEEERVISSVISVSM SSNPPTLYELEKITFTLSHRKVTDRYRSLCAFWNYSPDTMNGS WSSEGCELTYSNETHTSCRCNHLTHFAILMSSGPSIGIKDYNI LTRITQLGIIISLICLAICIFTFWFFSEIQSTRTTIHKNLCCS LFLAELVFLVGINTNTNKLFCSIIAGLLHYFFLAAFAWMCIEG IHLYLIVVGVIYNKGFLHKNFYIFGYLSPAVVVGFSAALGYRY YGTTKVCWLSTENNFIWSFIGPACLIILVNLLAFGVIIYKVFR HTAGLKPEVSCFENIRSCARGALALLFLLGTTWIFGVLHVVHA SVVTAYLFTVSNAFQGMFIFLFLCVLSRKIQEEYYRLFKNVPC CFGCLR
145	884	1	429	GTREAAPSRFMFLLFLLTCELAAEVAAEVEKSSDGPGAAQEPT WLTDVPAAMEFIAATEVAVIGFFQDLEIPAVPILHSMVQKFPG VSFGISTDSEVLTHYNITGNTICLFRLVDNEQLNLEDEDIESI DATKLSRFIEINSL
146	885	1	156	DETSGLIVREVSIEISRQQVEELFGPEDYWCQCVAWSSAGTTK SRKAYVRIA
147	886	1	121	GTRSIHVKLDVGKLHTQPKLAAQLRMVDDGSGKVEGLPGI

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148	887	128	652	XCGEDGSFTQVQCHTYTGYCWCVTPDGKPISGSSVQNKTPVCS GSVTDKPLSQGNSGRKDDGSKPTPTMETQPVFDGDEITAPTLW IKHLVIKDSKLNNTNIRNSEKVYSCDQERQSALEEAQQNPREG IVIPECAPGGLYKPVQCHQSTGYCWCVLVDTGRPLPGTSTRYV MPSX*
149	888	128	273	VLQLIKSQKFLNKLVILVETEKEKILRKEYVFADSKVSDSKLL KWAVR
150	889	1	948	RRLSLLDLQLGPLGRDPPQECSTFSPTDSGEEPGQLSPGVQFQ RRQNQRRFSMEDVSKRLSLPMDIRLPQEFLQKLQMESPDLPKP LSRMSRRASLSDIGFGKLETYVKLDKLGEGTYATVFKGRSKLT ENLVALKEIRLEHEEGAPCTAIREVSLLKNLKHANIVTLHDLI HTDRSLTLVFEYLDSDLKQYLDHCGNLMSMHNVKVRPRGQGPP ILAATCPEAQCGDPLSPPGIRLLRWLKPSHVGKRERAMPSTSP GTGLSALPQEQTHTVCHCLAVGIKPTLNSEHQFPSLSNGSVSY LPKCREASGEARGYE
151	890	3	108	HERHEPSPTALAFGDHPIVQPKQLSFKIIQVNDN
152	891	2	208	ARGPSLLSEFHPGSDRPQERRTSYEPIHPGPSPVDHDSLESKR PRLEQASDSHYQGHITGESLPGRVH
153	892	1	116	GTRKEEFSAEENFLILTEMATNHVQVLVEFTKKLPGIF
154	893	74	661	HTHKLVAPRPGLPPTSQWPRDAGRQASGGLPSLSTGPPKGPRD GLARGHPAEWLAGSPGNNSPTQGSLPPQLDLYAGALFVHICLG WNFYLSTILTLGITALYTIAGMVPAAGRSTQGTCKGVRRPPPP TGPREQPRKWPQQEPQKFLPVSLLPGARAPSSNLASTGRGPGC CNLHGRPADAHHGGGGCHPDNQR
155	894	55	312	MVNHSLQETSEQNVILQHTLQQQQQMLQQETIRNGELEDTQTK LEKQVSKLEQELQKQRESSAEKLRKMEEKCESAAHEADLKRQK *
156	895	38	185	VCPKWCRFLTMLGHCCYFWHVWPAS*ALSAGPTPTSRSFSPSP LRSIST
157	896	37	462	MRGPPVLLLQAAPMECPVPQGIPAGSSPEPAPDPPGPHFLRQE RSFECRMCGKAFKRSSTLSTHLLIHSDTRPYPCQFCGKRFHQK SDMKKHTYIHTGEKPHKCQTQREPTMVLSPADKTNVKAAWX*
158	897	3	175	HEQLTNNTATAPSATPVFGQVAASTAPSLFGQQTGITASTAVA TPQVISSRFINLDF
159	898	187	677	VSVFKNCPMY*ICIFLTKMFCVLII*NKF*VHKKPLQEVEIA AITHGALQGLAYLHSHTMIHRDIKAGNILLTEPGQVKLADFGS ASMASPANSFVGTPYWMAPEVILAMDEGQYDGKVDVWSLGITC IELAERKPPLFNMNAMSALYHIAQNESPTLQSNEW

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160	899	2	1060	RHARPGGGGHSNQRKMSLEQEEETQPGRLLGRRDAVPAFIEPN VRFWITERQSFIRRFLQWTELLDPTNVFISVESIENSRQLLCT NEDVSSPASADQRIQEAWKRSLATVHPDSSNLIPKLFRPAAFL PFMAPTVFLSMTPLKGIKSVILPQVFLCAYMAAFNSINGNRSY TCKPLERSLLMAGAVASSTFLGVIPQFVQMKYGLTGPWIKRLL PVIFLVQASGMNVYMSRSLESIKGIAVMDKEGNVLGHSRIAGT KAVRETLASRIVLFGTSALIPEVFTYFFKRTQYFRKNPGSLWI LKLSCTVLAMGLMVPFSFSIFPQIGQIQYCSLEEKIQSPTEET EIFYHRGV
161	900	3	564	HASGRLEVFYNGTWGSVGRRNITTAIAGIVCRQLGCGENGVVS LAPLSKTGSGFMWVDDIQCPKTHISIWQCLSAPWERRISSPAE ETWITCEDRIRVRGGDTECSGRVEIWHAGSWGTVCDDSWDLAE AEVVCQQLGCGSALAALRDASFGQGTGTIWLDDMRCKGNESFL WDCHAKPWGQSDCG
162	901	1099	2	LGDFPQPQRQRRPGASDLPPHLAGARQWEVRFFRHLPARTLPP SLRMPEGPELHLASQFVNEACRALVFGGCVEKSSVSRNPEVPF ESSAYRISASARGKELRLILSPLPGAQPQQEPLALVFRFGMSG SFQLVPREELPRHAHLRFYTAPPGPRLALCFVDIRRFGRWDLG GKWQPGRGPCVLQEYQQFRENVLRNLADKAFDRPICEALLDQR FFNGIGNYLRAEILYRLKIPPFEKARSVLEALQQHRPSPELTL SQKIRTKLQNPDLLELCHSVPKEVVQLGGRGYGSESGEEDFAA FRAWLRCYGMPGMSSLQDRHGRTIWFQGDPGPLAPKGRKSRKK KSKATQLSPEDRVEDALPPSK
163	902	3	335	LTWSACYWRDILRIQLWIAADILLRMLEKALLYSEHQNISNTG LSSQGLLIFAELIPAIKRTLARLLVIIASLDYGIEKPHLGTGM HRVIGLMLLYLIFANAESVIRVIG
164	903	2	135	FFFEMESRSAAQAGVQWCNLGSLQALPPRFTPFSCLSLPSSWD Y
165	904	74	645	YECEELAKKLENSQRDGISRNKLALAELYEDEVKCKSSKSNRP KATVFKSPRTPPQRFYSSEHEYSGLNIVRPSTGKIVNELFKEA REHGAVPLNEATRASGDDKSKSFTGGGYRLGSSFCKRSEYIYG ENQLQDVQILLKLWSNGFSLDDGELRPYNEPTNAQFLESVKRG VTLIACMPEIQQLMLEIF
166	905	14	1257	WPCGAAPGLTHASERMFTLTTMIQALAPVMGWDRKPLKMFSSE EMRGHLHHHHKCLTKILKVEGQVPDLPSCLPLTDNTRMLASIL INMLYDDLRCDPERDHFRKICEEYITGKFDPQDMDKNLNAIQT VSGILQGPFDLGNQLLGLKGVMEMMVALCGSERETDQLVAVEA LIHASTKLSRATFIITNGVSLLKQIYKTTKNEKIKIRTLVGLC KLGSAGGTDYGLRQFAEGSTEKLAKQCRKWLCNMSIDTRTRRW AVEGLAYLTLDADVKDDFVQDVPALQAMFELAKTSDKTILYSV ATTLVNCTNSYDVKEVIPELVQLAKFSKQHVPEEHPKDKKDFI DMRVKRLLKAGVISALACMVKADSAILTDQTKELLARVFLALC DNPKDRGTIVAQGGGKALIPLALEGTD

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167	906	3	894	VDSVGGGSESRSLDSPTSSPGAGTRQLVKASSTGTESSDDFEE RDPDLGDGLENGLGSPFGKWTLSSAAQTHQLRRLRGPAKCREC EAFMVSGTECEECFLTCHKRCLETLLILCGHRRLPARTPLFGV DFLQLPRDFPEEVPFVVTKCTAEIEHRALDVQGIYRVSGSRVR VERLCQAFENGRALVELSGNSPHDVSSVLKRFLQELTEPVIPF HLYDAFISLAKTLHADPGDDPGTPSPSPEVIRSLKTLLVQLPD SNYNTLRHLVAHLFRVAARFMENKMSANNLGIVFGPTL
168	907	1	394	GLHVISLHSADGRHWEDPLSELDSERVSAFLVTETLVFYLFCL LADETVVPPDVPSYLSSQGTLSDRQETVVRTEGGPQANGHIES NGKASVTVKQSSAVTVSLGAGGGLQVFTGQVPGIRWGKLGEAH AS
169	908	179	551	KIKHRPEEEPRWAAAGAQSAGPGAAEVAPPRPGTVAPGANGMT DSATANGDDRDPEIELFVKAGIDGESIGNCPFSQRLFMILWLK GVVFNVTTVDLKRKPADLRNLAPGTHPPFLAFNWYVKT
170	909	1	335	LGFSDGQEARPEEIGWLNGYNETTGERGDFPGTYVEYIGRKKI SPPTPKPRPPRPLPVAPGSSKTEADVEQQVLYKYRKKPSSSHR PQTPHNGKSKNFLHKQGLKKKKASL
171	910	1	895	RTRGVMELALRRSPVPRWLLLLPLLLGLNAGAVIDWPTEEGKE VWDYVTVRKDAYMFWWLYYATNSCKNFSELPLVMWLQGGPGGS STGFGNFEEIGPLDSDLKPRKTTWLQAASLLFVDNPVGTGFSY VNGSGAYAKDLAMVASDMMGLLKTFFSCHKEFQTVPFYIFSES YGGKMAAGIGLELYKAIQRGTIKCNFAGVALGDSWISPVDSVL SWGPYLYSMSLLEDKGLAEVSKVAEQVLNAVNKGLYREATELW GKAEMIIEQVKRGNTQRRACLAFSGGYRAHGWCCQTWSLH
172	911	553	194	PGWSRSPDLVIRLPRPPKVLGLQYYHFFFFLRWSL/DSVAQAE VQWHDLRSLQAPPPGFTPFSCLSLPGSWDYRCPPPRPANFLYF **RRGFTVLARMVSIS*PRDPPASASQSAGITVLSLFFFFEME SCSVAQAGVQWRYLGSLQALPPGFTPFSCLSLPSSWDYRRPPP RPANFFVFLVETGVSPC*PGWSRSPDLVIRLPQPPKVLGLQV
173	912	1761	1	PSMKTGELEKETAPLRKDADSSISVLEIHSQKAQIEEPDPPEM ETSLDSSEMAKDLSSKTALSSTESCTMKGEEKSPKTKKDKRPP ILECLEKLEKSKKTFLDKDAQRLSPIPEEVPKSTLESEKPGSP EAAETSPPSNIIDHCEKLASEKEVVECQSTSTVGGQSVKKVDL ETLKEDSEFTKVEMDNLDNAQTSGIEEPSETKGSMQKSKFKYK LVPEEETTASENTEITSERQKEGIKLTIRISSRKKKPDSPPKV LEPENKQEKTEKEEEKTNVGRTLRRSPRISRPTAKVAEIRDQK ADKKRGEGEDEVEEESTALQKTDKKEILKKSEKDTNSKVSKVK PKGKVRWTGSRTRGRWKYSSNDESEGSGSEKSSAASEEEEEKE SEEAILADDDEPCKKCGLPNHPELILLCDSCDSGYHTALPFAP PLMIHPQMGGW\F\CPTFCPTLNLLLLEKLEDQF\QDL\DVAL KKERALPERRK\ERLVYVGI\SIENIIPPQ\EPDFSEDQEEKK KDSKKSKANLL\ERRSTRTRKCISYRFDEFDEAIDEAIEDDIK EADGGGVGRGKDISTITGHRGKDISTILDEER

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174	913	3	539	KRRGSFKMAELDQLPDESSSAKALVSLKEGSLSNTWNEKYSSL QKTPVWKGRNTSSAVEMPFRNSKRSRLFSDEDDRQINTRSPKR NQRVAMVPQKFTATMSTPDKKASQKIGFRLRNLLKLPKAHKWC IYEWFYSNIDKPLFEGDNDFCVCLKESFPNLKTRKLTRVEWGK IRRLMG
175	914	166	635	MPEYLRKRFGGIRIPIILAVLYLFIYIFTKISVDMYAGAIFIQ QSLHLDLYLAIVGLLAITAVYTVAGGLAAVIYTDALQTLIMLI GALTLMGYSFAAVGGMEGLKEKYFLALASNRSENSSCGLPRED AFHIFRDPLTSDLPWPGVLFGMSIPSLX*
176	915	673	1025	XSASATSLTLSHCVDVVKGLLDFKKRRGHSIGGAPEQRYQIIP VMCCSLLATGGADRLIHLWNVVGSRLEANQTLEGAGGSITSVD FDPSGYQVLAATYNQVAQFWK*
177	916	3	139	QKRFPSNCGRDGKLFLWGQALHIIAKLLGKWRRLGMVFFSLLL SY
178	917	1	541	VHVCSSKMGALSTERLQYYTQELGVRERSGHSVSLIDLWGLLV EYLLYQEENPAKLSDQQEAVRQGQNPYPIYTSVNVRTNLSGED FAEWCEFTPYEVGFPKYGAYVPTELFGSELFMGRLLQLQPEPR ICYLQGMWGSAFATSLDEIFLKTAGSGLSFLEWYRGSVNITDD CQKPQLHN
179	918	1	628	EFLGRPTRPAKDEGNDEGKDEGKDEGKDEGKDEGKDEGKDERK DEGKDEGKDERKDEGKDEGKDEGKDEGKDEGKDEGKDEGKDEG NDEGKDEGKDEGKDEGKDEGKDEGKDERKDEGKDEGKDERKDE GKDEGKDEGKDEGKDEGKDEGKDEGKDEGNDEGKDEGKDEGKD EGKDEGKDEGKDEGNDEGNDEGNDEGKDEGKDERNDEGKDEGK DEGKDEGKDERNDEGKDERKDEGKDEGKDEGKDEGKDEGKDEG NDEGKDERKDEGKDEGKDEGKDK
180	919	27	471	PSLRPAWHEGEDFSYGLQPYCGYSFQVVGEMIRNREVLPCPDD CPAWAYALMIEGWNEFPSRRARFKDIHSRLRAWGNLSNYNSSE QTSGGRNTTQTSSLSTSPLCNVSNAPYVGPKQKVPPFPQTQVI PMKGQIRPMVPPPQLYVP
181	920	2	454	RNSGRHPRVRWILEERKRVMQEACAKYRASSSRRAVTPRHVSR IFVEDRHRVLYCEVPKAGCSNWKRVLMVLAGLASSTADIQHNT VHYGSALKRLDTFDRQGILHRLSTYTKMLFVREPFERLVSAFR DKFEHPNSYYHPVFCMAILAR
182	921	2	378	IMYSISPANSEEGQELYVCTVKDDVNLDTVLLLPFLKEIAVSQ LDQLSPEEQLLVKCAAIIGHSFHIDLLQHLLPGWDKNKLLQVL RALVDIHVLCWSDKSQELPAEPILMPSSIDIIDGTKEKK
183	922	181	513	GPHVVLVLRRCFLLSYFKGVEKAKAMPSPRILKTHLSTQLLPP SFWENNCKVRYQQLPVTEGKVSQPKRVLQTPTQSIRDHLCLST VSDAYQQRENIKFYIQQDIHLNSFK
184	923	32	239	FYYICRLSKEDKAFLWEKRYYCFKHPNCLPKILASAPNWKWVN LAKTYSLLHQWPALYPLIALELLDSK

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185	924	3	361	KMMI*GLFEIQQCPIGKHCNFLQVLRN/PNRDL/WLVSSFGKS SKGRERMGHHDEYYRLRGR/HNPSPDHSYKRNGESERKRKKSH ·*HMSKSQERHNSPSRGRNSDRSGGRCSRSDNGRSRYR
186	925	443	1412	PLSLFARVAGSRVEMPEPPGLGDEGRPLLHPGRREAVGSWVSA FAGDSTPCGPGDLSVPRREPFRLTAL*PHRSPVVRTSLIGLLL GFSVKEELRGVGWAARTPLGIR
187	926	2	917	FDKRQHEARIQQMENEIHYLQENLKSMEEIQGLTDLQLQEADE EKERILAQLRELEKKKKLEDAKSQEQVFGLDKELKKLKKAVAT SDKLATAELTIAKDQLKSLHGTVMKINQERAEELQEAERFSRK AAQAARDLTRAEAEIELLQNLLRQKGEQFRLEMEKTGVGTGAN SQVLEIEKLNETMERQRTEIARLQNVLYLTGSDNKGGFENVLE EIAELRREGSYQNDYISSMADPFKRRGYWYFMPPPPSSKVSSH SSQATKDSGVGLKYSASTPVRKPRPGQQDGKEGSQPPPASGYW VYSP
188	927	171	1082	SDASSFKTRVIVVPRPRVFPLGSAITENSLESDSQIGQFGVGF YSAFLVADKVIVTSKHNNDTQHIWESDSNEFSVIADPRGNTLG RGTTITLVLKEEASDYLELDTIKNLVKKYSQFINFPIYVWSSK TETVEEPMEEEEAAKEEKEESDDEAAVEEEEEEKKPKTKKVEK TVWDWELMNDIKPIWQRPSKEVEEDEYKAFYKSFSKESDDPMA YIHFTAEGEVTFKSILFVPTSAPRGLFDEYGSKKSDYIKLYVR RVFITDDFHDMMPKYLNFVKGVVDSDDLPLNVSRETLQQHKLL KV
189	928	718	275	CGSWMRRALIPPCRGGPSASDRCCSCSPSGFSAGRGRCPVQGC LRPHRVQLLRRWGPGSPAGQRLSKGFQLLRWWGPGSPAPEPRK GPFPPPDPPWPVTAVTVMAGSVPSAQSVDALESPGPLALEGPS SPRNLLWREMSIFLPGIF
190	929	1	550	PGPTPPPRHGSPPHRLIRVETPGPPAPPADERISGPPASSDRL AILEDYADPFDVQETGEGSAGASGAPEKVPENDGYMEPYEAQK MMAEIRGSKETATQPLPLYDTPYEPEEDGATPEGEGAPWPRES RLPEDDERPPEEYDQPWEWKKERISKAFAVDIKVIKDLPWPPP VGQLDSSPSLP
191	930	1	562	QFFSLFLRYQIHTGLQHSIIRPTQPNCLPLDNATLPQKLKEVG YSTHMVGKWHLGFYRKECMPTRRGFDTFFGSLLGSGDYYTHYK CDSPGMCGYDLYENDNAAWDYDNGIYSTQMYTQRVQQILASHN PTKPIFLYIAYQAVHSPLQAPGRYFEHYRSIININRRRYAAML SCLDEAINNVTLALK
192	931	3	580	RVRKGRGGERLQSPLRVPQKPERPPLPPKPQFLNSGAYPQKPL RNQGVVRTLSSSAQEDIIRWFKEEQLPLRAGYQKTSDTIAPWF HGILTLKKANELLLSTGMPGSFLIRVSERIKGYALSYLSEDGC KHFLIDASADAYSFLGVDQLQHATLADLVEYHKEEPITSLGKE LLLYPCGQQDQLPDYLELFE

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193	932	3	1641	GSLEKALFQLLKVWGQWAEQTRRLQRLDVSLSVARVRSAGPSC QNKGDLVMEALLEGIQNRGHGGGFLTSCEAELQELMKQIDIMV AHKKSEWEGRTHALETCLKIREQELKSLRSQLDVTHKEVGMLH QQVEEHEKIKQEMTMEYKQELKKLHEELCILKRSYEKLQKKQM REFRGNTKNHREDRSEIERLTAKIEEFRQKSLDWEKQRLIYQQ QVSSLEAQRKALAEQSEIIQAQLVNRKQKLESVELSSQSEIQH LSSKLERANDTICANELEIERLTMRVNDLVGTSMTVLQEQQQK EEKLRESEKLLEALQEEKRELKAALQSQENLIHEARIQKEKLQ EKVKATNTQHAVEAISLESVSATCKQLSQELMEKYEELKRMEA HNNEYKAEIKKLKEQILQGEQSYSSALEGMKMEISHLTQELHQ RDITIASTKGSSSDMEKRLRAEMQKAEDKAVEHKEILDQLESL KLENRHLSEMVMKLELGLHECSLPVSPLGSIATRFLEEEELRS HHILERLDAHIEELKRESEKTVRQFTALK
194	933	159	1053	TGFLGWSQGPSLTPTSLSALYPSQVEETGVVLSLEQTEQHSRR PIQRGAPSQKDTPNPGDSLDTPGPRILAFLHPPSLSEAALAAD PRRFCSPDLRRLLGPILDGASVAATPSTPLATRHPQSPLSADL PDELPVGTENVHRLFTSGKDTEAVETDLDIAQDADALDLEMLA PYISMDDDFQLNASEQLPRAYHRPLGAVPRPRARSFHGLSPPA LEPSLLPRWGSDPRLSCSSPSRGDPSASSPMAGARKRTLAQSS KDEDEGVELLGVRPPKRSPSPEHENFLLFPLSLSFLLTG
195	934	3	425	ELQDCFDVHDASWEEQIFWGWHNDVHIFDTKTQTWFQPEIKGG VPPQPRAAHTCAVLGNKGYIFGGRVLQTRMNDLHYLNLDTWTW SGRITINGESPKHRSWHTLTPIADDKLFLCGGLNAYNMPLSDG WIHNVTTHCWK
196	935	2	295	FFFLRTRSHSVTPRWECSDDITAHWQPQPWGSSDPLTFS/RPQ VVVPPRHTTLCP\ANFFVFCIFCRNRISPCWPGWSRTPWAQLI RLPRPPKVLGLQV
197	936	2	737	PREGQVKQGLLGDCWFLCACAALQKSRHLLDQVIPPGQPSWAD QEYRGSFTCRIWQFGRWVEVTTDDRLPCLAGRLCFSRCQREDV FWLPLLEKVYAKVHGSYEHLWAGQVADALVDLTGGLAERWNLK GVAGSGGQQDRPGRWEHRTCRQLLHLKDQCLISCCVLSPRAGE ARGQHGRAAASVPPTARPQAHCSFLCDWLHSPVRTKWEEVSLF SRVVSSVCDLPLLSSSRGTWPFSPLTSPFH
198	937	3	638	AECLEASIARYAHRVANSRYTFDGETVTLSPSQGVNQLHGGPE GFDKRRWQIVNQNDRQVLFALSSDDGDQGFPGNLGATVQYRLT DDNRISITYRATVDKPCPVNMTNHVYFNLDGEQSDVRNHKLQI LADEYLPVDEGGIPHDGLKSVAGTSFDFRSAKIIASEFLADDD QRKVKGYDHAFLLQAKGDGKKVAAHVWSADEKLQLKVYT
199	938	69	425	PLSRFLSKESQEDWGMERQSRVMSEKDEYQFQHQGAVELLVFN FLLILTILTIWLFKNHRFRFLHETGGAMVYDKPPKFAMSREQM SQSCSHTAHNASLLTDAGPLSCGESRASCLFL

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200	939	3	435	DSKEPRLQQLGLLEEEQLRGLGFRQTRGYKSLAGCLGHGPLVL QLLSFTLLAGLLVQVSKVPSSISQEQSRQDAIYQNLTQLKAAV GELSEKSKLQEIYQELTQLKAAVGELPEKSKLQEIYQELTWLK AAVGELPEKSKMQE
201	940	657	469	MQSIAWGHRRDRGESPLGWGQESEASPSALTEAPKAAHTTRLG FLAANNPNGHSQPQDSFLL*
202	941	1	714	FETLSMRGIPHMLALGPQQLLAQDEEGDTLLHLFAARGLRWAA YAAAEVLQVYRRLDIREHKGKTPLLVAAAANQPLIVEDLLNLG AEPNAADHQGRSVLHVAATYGLPGVLLAVLNSGVQVDLEARDF EGLTPLHTAILALNVAMRPSDLCPRVLSTQARDRLDCVHMLLQ MGANHTIQVSGDVGGQTLGDCVEWGHLDVRELQANADFASSLL RALEHVTSLLCALRVFCLFLCQL
203	942	3	479	DAWADAWVGTKMADLDSPPKLSGVQQPSEGVGGGRCSEISAEL IRSLTELQELEAVYERLCGEEKVVERELDALLEQQNTIESKMV TLHRMGPNLQLIEGDAKQLAGMITFTCNLAENVSSKVRQLDLA KNRLYQAIQRADDILDLKFCMDGVQTALR
204	943	1	706	AVEFRVPRSGSAYLYSYVTVGELWAFTTGWNLILSYVIGTASV ARAWSSAFDNLIGNHISKTLQGSIALHVPHVLAEYPDFFALGL VLLLTGLLALGASESALVTKVFTGVNLLVLGFVMISGFVKGDV HNWKLTEEDYELAMAELNDTYSLGPLGSGGFVPFGFEGILRGA ATCFYAFVGFDCIATTGEEAQNPQRSIPMGIGISLSVCFLADF AVSSALTLMMPYYQLQPESP
205	944	1	852	GFHPNTTHYRARAAARAGAGSFVGEVSAVDKDFGPNGEVRYSF EMVQPDFELHAISGEITNTHQFDRESLMRRRGTAVFSFTVIAT DQGIPQPLKDQATVHVYMKDINDNAPKFLKDFYQATISESAAN LTQVLRVSASDVDEGNNGLIHYSIIKGNEERQFAIDSTSGQVT LIGKLDYEATPAYSLVIQAVDSGTIPLNSTCTLNIDILDENDN TPFF/LLNQHFFVDVLENMRIGELGASGTATDS\DSGDIADLY YKFTGTKHPPGTFSISPKHLGVFFLAQK
206	945	3	363	GDCYDLYGGEKFATLAELVQYYMEHHGQLKEKNGDVIELKNPL NCADPTSQRWFHGHLSGKEAEKLLTEKGKHSSFLVRESQSHPG DFVLSVCTGDDKGESNDGKSKVTHVMIHCQELK
207	946	218	717	IDSGNQNGGNDDKTKNAERNYLNVLPGEFYITRHSNLSEIHVA FHLCVDDHVKSGNITARDPAIMGLRNILKVCCTHDITTISIPL LLVHDMSEEMTIPWCLRRAELVFKCVKGFMMEMASWDGGISRT VQFLVPQSISEEMFYQLSNMLPQIFRVSSTLTLTSKH
208	947	3	368	SILPALLVTILIFMDQQITAVIVNRKENKLKKAAGYHLDLFWV GILMALCSFMGLPWYVAATVISIAHIDSLKMETETSAPGEQPQ FLGVREQRVTGIIVFILTGISVFLAPILKCIPLPV
209	948	2	575	GASRVEAGSANGMLIDGGSQIVKVQGHADGTTINKSGSQDVVQ GSLATNTTINGGRQYVEQSTVETTTIKNGGEQRVYESRALDTT IEGGTQSLNSKSTAKNTHIYSGGTQIVDNTSTSDVIEVYSGGV LDVRGGTATNVTQHDGAILKTNTNGTTVSGTNSEGAFSIHNHV ADNVLLENGGHLDINAYGS

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210	949	1	296	FFSSIQLTDDQGPVLMTTVAMPVFSKQNETRSKGILLGVVGTD VPVKELLKTIPKYKVMNDLIPEIKATEMPRALFSQSSGFKLYF GAMFLLTTITAC
211	950	3	594	SCSGTGTNACYMEDMSNIDLVEGDEGRMCINTEWGAFGDDGAL EDIRTEFDRELDLGSLNPGKQLFEKMISGLYLGELVRLILLKM AKAGLLFGGEKSSALHTKGKIETRHVAAMEKYKEGLANTREIL VDLGLEPSEADCIAVQHVCTIVSFRSANLCAAALAAILTRLRE NKKVERLRTTVGMDGTLYKIHPQY
212	951	2	2167	FVAIATNGVVPAGGSYYMISRSLGPEFGGAVGLCFYLGTTFAG AMYILGTIEILLAYLFPAMAIFKAEDASGEAAAMLNNMRVYGT CVLTCMATVVFVGVKYVNKFALVFLGCVILSILAIYAGVIKSA FDPPNFPICLLGNRTLSRHGFDVCAKLAWEGNETVTTRLWGLF CSSRFLNATCDEYFTRNNVTEIQGIPGAASGLIKENLWSSYLT KGVIVERSGMTSVGLADGTPIDMDHPYVFSDMTSYFTLLVGIY FPSVTGIMAGSNRSGDLRDAQKSIPTGTILAIATTSAVYISSV VLFGACIEGVVLRDKFGEAVNGNLVVGTLAWPSPWVIVIGSFF STCGAGLQSLTGAPRLLQAISRDGIVPFLQVFGHGKANGEPTW ALLLTACICEIGILIASLDEVAPILSMFFLMCYMFVNLACAVQ TLLRTPNWRPRFRYYHWTLSFLGMSLCLALMFICSWYYALVAM LIAGLIYKYIEYRGAKKEWGDGIRGLSLSAARYALLRLEEGPP HTKNWRPQLLVLVRVDQDQNVVHPQLLSLTSQLKAGKGLTIVG SVLEGTFLENHPQAQRAEESIRRLMEAEKVKGFCQVVISSNLR DGVSHLIQSGGLGGLQHNTVLVGWPRNWRQKEDHQTWRNFIEL VRETTAGHLALLVTKNVSMFPGNPERFSEGSIDRWGIGHDGGM LMLVPFLLRHHKVWRKCKMRIFTVAQMVDMHAM
213	952	1	128	FYLRLLSFFCFQEHEKRCWSVDFNLMDPKLLASGSDDAKGTV
214	953	3	244	RNSKAMHRSSCDGPLLSLPSVGRSATHALVQAQLICSGARRGM HAFIVPIRSLQDHTPLPGKPIMLPQGTLPGGEPRWPP
215	954	2	609	CGTLILQARAYVGPHVLAVVTRTGFCTAKGGLVSSILHPRPIN FKFYKHSMKFVAALSVLALLGTIYSIFILYRNRVPLNEIVIRA LDLVTVVVPPALPAAMTVCTLYAQSRLRRQGIFCIHPLRINLG GKLQLVCFDKTGTLTEDGLDVMGVVPLKGQAFLPLVPEPRRLP VGPLLRALATCHALSRLQDTPVGDPMDLKM
216	955	292	855	QIEYFRSLLDEHHISYVIDEDVKSGRYMELEQRYMDLAENARF EREQLLGVQQHLSNTLKMAEQDNKEAQEMIGALKERSHHMERI IESEQKGKAALAATLEEYKATVASDQIEMNRLKAQLENEKQKV AELYSIHNSGDKSDIQDLLESVRLDKEKAETLASSLQEDLAHT RNDANRLQDAIAKGRG
217	956	2	400	ARYRFTLSARTQVGSGEAVTEESPAPPNEATPTAAPPTLPPTT VGATGAVSSTDATAIAATTEATTVPIIPTVAPTTMATTTTVAT TTTTTAAATTTTESPPTTTSGTKIHESAPDEQSIWNVTVLPNS KWA

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218	957	1	662	LKSTQDEINQARSKLSQLHESRQEAHRSLEQYDQVLDGAHGAS LTDLANLSEGVSLAERGSFGAMDDPFKNKALLFSNNTQELHPD PFQTEDPFKSDPFKGADPFKGDPFQNDPFAEQQTTSTDPFGGD PFKESDPFRGSATDDFFKKQTKNDPFTSDPFTKNPSLPSKLDP FESSDPFSSSSVSSKGSDPFGTLDPFGSGSFNSAEGFADFSTI EGRRG
219	958	1	752	RTRGGSGNSSQPSLREGHDKPVFNGAGKPHSSTSSPSVPKTSA SRTQKSAVEHKAKKSLSHPSHSRPGPMVTPHNKAKSPGVRQPG SSSSSAPGQPSTGVARPTVSSGPVPRRQNGSSSSGPERSISGS KKPTNDSNPSRRTVSGTCGPGQPASSSGGPGRPISGSVSSARP LGSSRGPGRPVSSPHELRRPVSGLGPPGRSVSGPGRSISGSIP AGRTVSNSVPGRPVSSLGPGQTVSSSGPTIKPKCT
220	959	439	582	RGKGITPRYHLCISDPHNLKICCRVNGEVVQSSNTNQMVFKTE DLIAW
221	960	230	420	VVAVTRWLCENGVSYLRKCVCSACRHGTRCAGEVAAAANNSHC TVGIAFNAKIGGMGNQLTWM
222	961	311	490	GAPPPFVPTLKSDDDTSNFDEPKKNSWVSSSPCQLSPSGFSGE ELPFVGFSYSKALGIL
223	962	2	422	FVERLAHLHAACAPRRKVALLLEVCRDVYAGLARGENQDPLGA DAFLPALTEELIWSPDIGDTQLDVEFLMELLDPDELRGEAGYY LTTWFGALHHIAHYQPETDRAPRGLSSEARASLHQWHRRRTLH RKDHPRAQQLD
224	963	385	844	FWMDPYNPLNFKAPFQTSGENEKGCRDSKTPSESIVAISECHT LLSCKVQLLGSQESECPDSVQRDVLSGGRHTHVKRKKVTFLEE VTEYYISGDEDRKGPWEEFARDGCRFQKRIQETEDAIGYCLTF EHRERMFNRLQGTCFKGLNVLKQC
.225	964	3	166	AASTAYSFFGTVENMAPKVVNRPGHTQSADWGSFGGLMGRFEF GIFLKGKEIVK
226	965	1	118	GFVFLPGPMSVGLDFSLPGMEHVYGIPEHADNLRLKVTE
227	966	1	390	GSECQGTDLDTRNCTSDLCVHTASGPEDVALYVGLIAVAVCLV LLLLVLILVYCRKKEGLDSDVADSSILTSGFQPVSIKPSKADN PHLLTIQPDLSTTTTTYQGSLCPRQDGPSPKFQLTNGHLLSPL G
228	967	1	777	LIYNEDMICWIESRESSNQLKCIQITKAGGLTDEWTINILQSF HNVQQMAIDWLTRNLYFVDHVGDRIFVCNSNGSVCVTLIDLEL HNPKAIAVDPIAGKLFFTDYGNVAKVERCDMDGMNRTRIIDSK TEQPAALALDLVNKLVYWVDLYLDYVGVVDYQGKNRHAVIQGR QVRHLYGITVFEDYLYATNSDSYNIVRISRFNGTDIHSLIKIE NAWGIRIYQKRTQPTVRSHACEVDPYGMPGGCSHICLLSSSYT K
229	968	3	488	SSGNPQPGDSSGGGAGGGLPSPGEQELSRRLQRLYPAVNQQET PLPRSWSPKDKYNYIGLSQGNLRVHYKGHGKNHKDAASVRATH PIPAACGIYYFEVKIVSKGRDGYMGIGLSAQGVNMNRLPGWDK HSYGYHGDDGHSFCSSGTGQPYGPTFTTGDVI

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230	969	1	228	FFFFKMGSRSVTQAGVQWCDVSSLQAPPPRFTLFCLSLPSSWD YRCVPPCPANFFVFLVETGFHRVSQYGLDLLTS
231	970	2	119	QLSLARGKVFLCALSFVYFAKALAEGYLKSTITQIERRVDIPS SLVGVIDGSFEIGNLLVITFVSYFGAKLHRPKIIGAGCVIMGV GTLLIAMPQFFMEQYKYERYSPSSNSTLSISPCLLESSSQLPV SVMEKSKSKISNECEVDTSSSMWIYVFLGNLLRGIGETPIQPL GIAYLDDFASEDNAAFYIGCVQTVAIIGPIFGFLLGSLCAKLY VDIGFVNL/DHF*VSAQLGTRKGVLVCLVFCLLCQSIGRRLSE EHHHSDREKG
232	971	221	1068	QPAGRVEAFCKFHMWAEGMTSLMKAALDLTYPITSMFSGAGFN SSIFSVFKDQQIEDLWIPYFAITTDITASAMRVHTDGSLWRYV RASMSLSGYMPPLCDPKDGHLLMDGGYINNLPADVARSMGAKV VIAIDVGSRDETDLTNYGDALSGWWLLWKRWNPLATKVKVLNM AEIQTRLAYVCCVRQLEVVKSSDYCEYLRPPIDSYSTLDFGKF NEICEVGYQHGRTVFDIWGRSGVLEKMLRDQQGPSKKPASAVL TCPNASFTDLAEIVSRIEPAKPAM
233	972	133	635	LWVIMFVSYLILTLLHVQTAVLARPGGESIGCDDYLGSDKVVD KCGVCGGDNTGCQVVSGVFKHALTSLGYHRVVEIPEGATKINI TEMYKSNNYLALRSRSGRSIINGNWAIDRPGKYEGGGTMFTYK RPNEISSTAGESFLAEGPTNEILDVYVSLDVSGLFFGF
234	973	1	420	ISGGTRSAGPLRRNYNFIAAVVEKVAPSVVHVQLWGRNQQWIE VVLQNGARYEAVVKDIDLKLDLAVIKIESNAELPVLMLGRSSD LRAGEFVVALGSPFSLQNTATAGIVSTKQRGGKELGMKDSDMD YVQIDATINYG
235	974	2	860	PRVRELKEILDRKGHFSENETRWIIQSLASAIAYLHNNDIVHR DLKLENIMVKSSLIDDNNEINLNIKVTDFGLAVKKQSRSEAML QATCGTPIYMAPEVISAHDYSQQCDIWSIGVVMYMLLRGEPPF LASSEEKLFELIRKGELHFENAVWNSISDCAKSVLKQLMKVDP AHRITAKELLDNQWLTGNKLSSVRPTNVLEMMKEWKNNPESVE ENTTEEKNKPSTEEKLKSYQPWGNVPETNYTSDEEEEKQVGRI IAAFLPSVKYPHHTWNIFLQICLFVVSL
236	975	1	467	LSISVSDVSLSDEGQYTCSLFTMPVKTSKAYLTVLGVPEKPQI SGFSSPVMEGDLMQLTCKTSGSKPAADIRWFKNDKEIKDVKYL KEEDANRKTFTVSSTLDFRVDRSDDGVAVICRVDHESLNATPQ VAMQVLEMHYTPSVKIIPSTPFPQEG
237	976	3	417	YNQKVDLFSLGIIFFEMSYHPMVTASERIFVLNQLRDPTSPKF PEDFDDGEHAKQKSVISWLLNHDPAKRPTATELLKSELLPPPQ MEESELHEVLHHTLTNVDGKAYRTIDGPRSFRQRISPAIA\YT YD\SDILKGN

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238	977	2	740	DQDYKYDSTSDDSNFLNPPRGWDHTAPGHRTFETKDQPEYDST DGEGDWSLWSVCSVTCGNGNQKRTRSCGYACTATESRTCDRPN CPGIEDTFRTAATEVSLLAGSEEFNATKLFEVDTDSCERWMSC KSEFLKKYMHKVMNDLPSCPCSYPTEVAYSTADIFDRIKRKDF RWKDASGPKEKLEIYKPTARYCIRSMLSLESTTLAAQHCCYGD NMQLITRGKGAGTPNLISTEFSAELHYKVDV
239	978	2	612	ESEENGESAMDSTVAKEGTNVPLVAAGPCDDEGIVTSTGAKEE DEEGEDVVTSTGRGNEIGHASTCTGLGEESEGVLICESAEGDS QIGTVVEHVEAEAGAAIMNANENNVDSMSGTEKGSKDTDICSS AKGIVESSVTSAVSGKDEVTPVPGGCEGPMTSAASDQSDSQLE KVEDTTISTGLVGGSYDVLVSGEVPECEVAH
240	979	79	361	VCIICLIFSYYSFDSALQSAKSSLGGNDELSATFLEMKGHFYM YAGSLLLKMGQHGNNVQWRALSELAALCYLIAFQVSLPLGAID ISRSLDVF
241	980	2	681	QHPSQEKPQVLTPSPRKQKLNRKYRSHHDQMICKCLSLSISYS ATIGGLTTIIGTSTSLIFLEHFNNQYPASEVVNFGTWFLFSFP ISLIMLVVSWFWMHWLFLGCNFKETCSLSKKKKTKREQLSEKR IQEEYEKLGDISYPEMVTGFFFILMTVLWFTREPGFVPGWDSF FEKKGYRTDATVSVFLGFLLFLIPAKKPCFGKKNDGENQEHSL GTEPIITWKDF
242	981	1	491	LEREGDKGTPVLRGFSSVSGSWSRRMPPFLLLTCLFITGTSVS PVALDPCSAYISLNEPWRNTDHQLDESQGPPLCDNHVNGEWYH FTGMAGDAMPTFCIPENHCGTHAPVWLNGSHPLEGDGIVQRQA CASFNGNCCLWNTTVEVKACPGGYYVYRLTKPSV
243	982	1	983	CGRTMSDIRHSLLRRDALSAAKEVLYHLDIYFSSQLQSAPLPI VDKGPVELLEEFVFQVPKERSAQPKRLNSLQELQLLEIMCNYF QEQTKDSVRQIIFSSLFSPQGNKADDSRMSLLGKLVSMAVAVC RIPVLECAASWLQRTPVVYCVRLAKALVDDYCCLVPGSIQTLK QIFSASPRFCCQFITSVTALYDLSSDDLIPPMDLLEMIVTWIF EDPRLILITFLNTPIAANLPIGFLELTPLVGLIRWCVKAPLAY KRKKKPPLSNGHVSNKVTKDPGVGMDRDSHLLYSKLHLSVLQV LMTLQLHLTEKNLYGPPGADPLRPHG
244	983	32	362	SACSTGPELPGRATRSLTRPANQKGCDGDRLYYDGCAMIAMNG SVFAQGSQFSLDDVEVLTATLDLEDVRSYRAEISSRNLAVSAP VDTCVGCSSKTWKVAPFVRAWWRP
245	984	158	398	APLSRLCFPQVLVNEGGGFDRASGSFVAPVRGVYSFRFHVVKV YNRQTVQVTSALAPIPGSGGWGGGRRGAQLTSGWTLH
246	985	2	707	PHIIGAEDDDFGTEHEQINGQCSCFQSIELLKSRPAHLAVFLR HVVSQFDPATLLCYLYSDLYKHTNSKETRRIFLEFHQFFLDRS AHLKVSVPDEMSADLEKRRPELIPEDLHRHYIQTMQERVHPEV QRHLEDFRQKRSMGLTLAESELTKLDAERDKDRLTLEKERTCA EQIVAKIEEVLMTAQAVEEDKSSTMQYVILMYMKHLGVKVKEP RNLEHKRGRIGFLPKIKQSM

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247	986	18	441	SPGTGRGPGPTSFVCLPTPQCPFIDDFILALHRKIKNEPVVFP EGPEISEELKDLILKMLDKNPETRIGVPDIKLHPWVTKNGEEP LPSEEEHCSVVEVTEEEVKNSVRLIPSWTTVILVKSMLRKRSF GNPFEPQARMA
248	987	3	732	HASGIKIDKTSDGPKLFLTEEDQKKLHDFEEQCVEMYFNEKDD KFHSGSEERIRVTFERVEQMCIQIKEVGDRVNYIKRSLQSLDS QIGHLQDLSALTVDTLKTLTAQKASEASKVHNEITRELSISKH LAQNLIDDGPVRPSVWKKHGVVNTLSSSLPQGDLESNNPFHCN ILMKDDKDPQCNIFGQDLPAVPQRKEFNFPEAGSSSGALFPSA VSPPELRQRLHGVELLKIFNKKQKKRA
249	988	3	468	CCRWIDCFALYDQQEELVRHIEKVHIDQRKGEDFTCFWAGCPR RYKPFNARYKLLIHMRVHSGEKPNKCTFEGCEKAFSRLENLKI HLRSHTGEKPYLCQHPGCQKAFSNSSDRAKHQRTHLDTKPYAC QIPGCTKRYTDPSSLRKHVKAHSSK
250	989	356	553	LPLLWTLSDFGGTMDQSGMEIPVTLIIKAPNQKYSDQTISCFL NWTVGKLKTHLSNVYPSKPVSV
251	990	1	895	AGTRMCVVAAAEELVCGA\RGLWMRRTRRPRFVLMNKMDDLNL HYRFLNWRRRIREIREVRAFRYQERFKHILVDGDTLSYHGNSG EVGCYVASRPLTKDSNYFEVSIVDSGVRGTIAVGLVPQYYSLD HQPGWLPDSVAYHADDGKLYNGRAKGRQFGSKCNSGDRIGCGI EPVSFDVQTAQIFFTKNGKRVGSTIMPMSPDGLFPAVGMHSLG EEVRLHLNAELGREDDSVMMVDSYEDEWGRLHDVRVCGTLLEY LGKGKSIVDVGLAQARHPLSTRSHYFEVEIVDPGEKCYIA
252	991	51	674	QQAEEHLAAYSVSDSDSGKDPSMECCRRATPGTLLLFLAFLLL SSRTARSEEDRDGLWDAWGPWSECSRTCGGGASYSLRRCLSSK SCEGRNIRYRTCSNVDCPPEAGDFRAQQCSAHNDVKHHGQFYE WLPVSNDPDNPCSLKCQAKGTTLVVELAPKVLDGTRCYTESLD MCISGLCQVSADLFSFNLSRGFQCLCVNGLHSLTL
253	992	2	554	RLLRQELVVLCHLHHPSLISLLAAGIRPRMLVMELASKGSLDR LLQQDKASLTRTLQHRIALHVADGLRYLHSAMIIYRDLKPHNV LLFTLYPNAAIIAKIADYGIAQYCCRMGIKTSEGTPGFRAPEV ARGNVIYNQQADVYSFGLLLYDILTTGGRIVEGLKFPNEFDEL EIQGKLPDPVKE
254	993	3	437	KASNSTHEFRIGLPEGWESEKKAVIPLGIGPPLTLICLGVLGG ILIYGRKGFQTAHFYLKDSPSPKVISTPPPPIFPISKEVGPIP IKHFPKHVANLHASRGFTEKFETLKKFYQEGQSCTVDLGITAN SSNHPDNRHRNRSLI
255	994	3	445	SFPDRTASLVLLSVPVGQAGMQQRGLAIVALAVCAALHASPAI LPIASSCCTEVSHHISRRLLERVNMCRIQRADGDCDLAAVILH VKRRRICVSPHNHTVKQWMKVQAAKKNGKGNVCHRKKHHGKRN SNRAHQGKHETYGHKTPY

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine; C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
256	995	2	737	FEQPGNPGDPRVRTPPPWGPHFFALIPSSPKEVPATPSSRRDP IAPTATLLSKKTPATLAPKEALIPPAMTVPSPKKTPAIPTPKE APATPSSKEASSPPAVTPSTYKGAPSPKELLIPPAVTSPSPKE APTPPAVTPPSPEKGPATPAPKGTPTSPPVTPSSLKDSPTSPA SVTCKMGATVPQASKGLPAKKGPTALKEVLVAPAPESTPIITA PTRKGPQTKKSSATSPPICPDPSAKNGSKG
257	996	79	3	FFLKIQGLGWARWLTPVIPVLWEAE
258	997	307	475	AGFGYGLPISRLYAKYFQGDLNLYSLSGYGTDAIIYLKVSLEF NSKILFLKPLLLL
259	998	26	622	WMRAPMLQKQQAPRMDTPPPEERLEKQNEKLNNQEEETEFKEL DGLREALANLRGLSEEERSEKAMLRSRIEEQSQLICILKRRSD EALERCQILELLNAELEEKMMQEAEKLKAQGEYSRKLEERFMT LAANHELMLRFKDEYKSENIKLREENEKLRLENNSLFSQALKD EEAKVLQLTVRCEALTGELETLKERC
260	999	2	241	DPGASHASVQVQVLKEQLFAGRMPSPFRSCALMGMCGSRSADN LSCPSPLNVMEPVSFFPLKSLGKGMIQHFRHIVSLV
261	1000	1	620	VTTTTHSVGRGHELQLLNEELRNIELECQNIMQAHRLQKVTDQ YGDIWTLHDGGFRNYNTSIDMQRGKLDDIMEHPEKSDKDSSSA YNTAESCRSTPLTVDRSPDSSLPRVINLTNKKNLRSTMAATQS. SSGQSSKESTSTKAKTTEQGCSAESKEKVLEGSKLPDQEKAVS EHIPYLSPYHSSSYRYANIPAHARHYQSYMQLIQ
262	1001	3	420	VWGCLATVSTHKKIQGLPFGNCLPVSDGPFNNSTGIPFFYMTA KDPVVADLMKNPMASLMLPESEGEFCRKNIVDPEDPRCVQLTL TGQMIAVSPEEVEFAKQAMFSRHPGMRKWPRQYEWFFMKMRIE HIWLQKWYG
263	1002	43	441	QAANMAVARVDAALPPGEGSVVNWSGQGLQKLGPNLPCEADIH TLILDKNQIIKLENLEKCKRLIQLSVANNRLVRMMGVAKLTLL RVLNLPHNSIGCVEGLKELVHLEWLNLAGNNLIAMEQINSCTA LQHL
264	1003	3	834	FRAAVGAVPEGAWKDTAQLHKSEEAKRVLRYYLFQGQRYIWIE TQQAFYQVSLLDHGRSCDDVHRSRHGLSLQDQMERKAIYGPNV ISIPVKSYPQLLVDEAFSIALWLADHYYWYALCIFLISSISIC LSLYKTRKQSQTLRDMVKLSMRVCVCRPGGEEEWVDSSELVPG DCLVLSQEGGLMPCDAALVAGECMVNDSSLTGESIPVLKTALP EGLGPYCAETHRRHTLFCGTLILHARAYVGPHVLAVVTRTGMS REAGLERDPGSAPLKRWS
265	1004	2	670	FVGGGLHLHLCLLLCFMLPEDAAMAVLTASNHVSNVTVNYNIT VERMNRMQGLRVSTVPAVLSPNATLALTAGVLVDSAVEVAFLW TFGDGEQALHQFQPPYNESFPVPDPSVAQVLVEHNVTHTYAAP GEYVLTVLASNAFENRTQQVLIRSGRVPIVSLECVSCKAQAVY EVSRSSYVYLEGRCLNCSSGSKRGRWAARTFSNKTLVLDETTT STGSASM

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
266	1005	2	1093	PEFLGRLFRGKAATLHVHSDQKPLHDGALGSQQNLVRMKEALR ASTMDVTVVLPSGLEKRSVLNGSHAMMDLLVELCLQNHLNPSH HALEIRSSETQQPLSFKPNTLIGTLNVHTVFLKEKVPEEKVKP GPPKVPEKSVRLVVNYLRTQKAVVRVSPEVPLQNILPVICAKC EVSPEHVVLLRDNIAGEELELSKSLNELGIKELYAWDNRRETF RKSSLGNDETDKEKKKFLGFFKVNKRSNSKGCLTTPNSPSMHS RSLTLGPSLSLGSISGVSVKSEMKKRRAPPPPGSGPPVQDKAS EKVSLGSQIDLQKKKRRAPAPPPPQPPPPSPLIPNRTEDKEEN RKSTMVYCCASFPTQAKRF
267	1006	686	400	VQWHNLHSLQPLPAGFK*FLCFSLPSSWDYRCAPPLP/APFFF YFLFLVELGFHHIG*AGLELTSTDLPASAS/ESAGITGMSHRA RPMDFFLLKIL
268	1007	1	453	GRRFRPPSDEEREPWEPWTQLRLSGHLKPLHYNLMLTAFMENF TFSGEVNVEIACRNATRYVVLHASRVAVEKVQLAEDRAFGAVP VAGFFLYPQTQVLVVVLNRTLDAQRNYNLKIIYNALIENELLG FFRSSYVLHGERRFLGVTQFSP
269	1008	333	526	KELDPFYNS*RKIKYLRIYLTKEVKDLYKENYKTLLKEITDDT N/KKHIPSSWTGRINTVKMTIL
270	1009	699	882	VPHPLQAIHEQMNCKEYQEDLALRAQNDAAARRPSEMFKVRLA QGRGLASLSSGIQSGVG
271	1010	16	148	RWNSLTCVVLTFLGHRLLKRFLVPKLRRFLKPQGHPRLLLWFK R
272	1011	1	659	YGEFVTYQGVAVTRSRKEGIAHNYKNETEWRANIDTVMAWFTE EDLDLVTLYFGEPDSTGHRYGPESPERREMVRQVDRTVGYLRE SIARNHLTDRLNLIITSDHGMTTVDKRAGDLVEFHKFPNFTFR DIEFELLDYGPNGMLLPKEGRLEKVYDALKDAHPKLHVYKKEA FPEAFHYANNPRVTPLLMYSDLGYVIHGVSRLLEAPPPGAPSP GSGS
273	1012	146	413	RIPLLRLRSSTYRSKGFDVTVKHSHGSWTGFGGEDLATIPKGL NTYFLVNIATIFESKNFFLPGIKWNGILGLSYATLAKPSSSLE TFF
274	1013	3	251	IKSYSGPNGRSCQIWQRLRWGSRELLLGWKLSHSFSTCPFQFP DIVEFCEAMANAGKTVIVAALDGTFQRKVRRLIQVWSWD
275	1014	326	651	YCFCFDLLH*CIHRDVKPENILITKHSVIKLCDFGFARLLTGP SDYYTDYVATRWYRSPELPVGDTQY\GPPV\DVW\AIGCVSAE \LLSGKCLWWPGKS/DMLDQLYLIRK
276	1015	224	435	RGWALDWIGADLSLHLQEEVETEVAWEECGHVLLSLCYSSQQG GLLVGVLRCAHLAPMDANGYSDPFVRL
277	1016	2	429	GGILAMEYAPGGTLAEFIQKRCNSLLEEETILHFFVQILLALH HVHTHLILHRDLKTQNILLDKHRMVVKIGDFGISKILSSKSKA YTVVGTPCYISPELCEGKPYNQKSDIWALGCVLYELASLKRAF EAANLPALVLKIM

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
278	1017	1	262	VQCGGIHQVSGAVVVSGLLQGMMGLLGSPGHVFPHCGPLVLAP SLVVAGLSAHREVAQFCFTHWGLALLYVSPERRGMVPSGGVWG D
279	1018	1	480	PRMTGSTHASAPSYGGSCRNNLFYREETYTPKAETDEMNEVET APIPEENHVWLQPRVMRPTKPKKTSAVNYMTQVVRCDTKMKDR CIGSTCNRYQCPAGCLNHKAKIFGSLFYESFASICRAAIHYGI LDDKGGLVDITRNGKVPFFVKSERHGVQSLR
280	1019	271	792	VPQNIICAFFCVPCRFASTIPFWGLTLHLQHLGNNVFLLQTLF GAVTLLANCVAPWALNHMSRRLSQMLLMFLLATCLLAIIFVPQ EMQTLRVVLATLGVGAASLGITCSTAQENELIPSIIRGRATGI TGNFANIGGALASLVMILSIYSRPLPWIIYGVFAILSGLVVLL LP
281	1020	2	679	VLVSRDHMKSAQQFFQLVGGSASECDTIPGRQCMASCFFLLKQ FDDVLIYLNSFKSHFYNDDIFNFNYAQAKAATGNTSEGEEAFL LIQSEKMKNDYIYLSWLARGYIMNKKPRLAWELYLKMETSGES FSLLQLIANDCYKMGQFYYSAKAFDVLERLDPNPEYWEGKRGA CVGIFQMIIAGREPKETLREVLHLLRSTGNTQVEYMIRIMKKW AKENRVSILK
282	1021	3	359	LKVSDELVQQYQIKNQCLSAIASDAEQEPKIDPYAFVEGDEEF LFPDKKDRQNSEREAGKKHKVREITVHQRVTVDFVALHIVTLL LPQLSHFFCLRIERVIIYLEKPIFARLRWLMP
283	1022	3	538	GVPRNLPSSLEYLLLSYNRIVKLAPEDLANLTALRVLDVGGNC RRCDHAPNPCMECPRHFPQLHPDTFSHLSRLEGLVLKDSSLSW LNASWFRGLGNLRVLDLSENFLYKCITKTKAFQGLTQLRKLNL SFNYQKRVSFAHLVSGPPFLRGSLGRPLKGAGTWHGNLSFPLH FEWGKT
284	1023	3	442	ILFAALIWSSFDENIEASAGGGGGSSIDAVMVDSGAVVEQYKR MQSQESSAKRSDEQRKMKEQQAAEELREKQAAEQERLKQLEKE RLAAQEQKKQAEEAAKQAELKQKQAEEAAAKAAADAKAKAEAD AKAAEEAAKKAAADAKK
285	1024	1	119	AMEIVHEPRDLERYMREAVKVSNDSPVLLDRFLNDAIEC
286	1025	67	227	MLSPGYDYGYVCVEFSLLEDAIGCMEANQVALYFGQMMLEGYI FLYMGREGFK
287	1026	2	1101	PRVRSSGGQEDPASQQWARPRFTQPSKMRRRVIARPVGSSVRL KCVASGHPRPDITWMKDDQALTRPEAAEPRKKKWTLSLKNLRP EDSGKYTCRVSNRAGAINATYKVDVIQRTRSKPVLTGTHPVNT TVDFGGTTSFQCKVRSDVKPVIQWLKRVEYGAEGRHNSTIDVG GQKFVVLPTGDVWSRPDGSYLNKLLITRARQDDAGMYICLGAN TMGYSFRSAFLTVLPDPKPPGPPVASSSSATSLPWPVVIGIPA GAVFILGTLLLWLCQAQKKPCTPAPAPPLPGHRPPGTARDRSG DKDLPSLAALSAGPGVGLCEEHGSPAAPQHLLGPGPVAGPKLY PKLYT\DIPHHTHTHTPHPPAN
288	1027	3	96	NFHFTGKCLFMSGLSEVQLTHMDDHTLPGY

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine; I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
289	1028	95	407	SPRKRKTRHSTNPPLECHVGWVMDSRDHGPGTSSVSTSNASPS EGAPLAGSYGCTPHSFPKFQHPSHELLKENGFTQQVYHKYRRR CLSERKRLGIGQSQEMNT
290	1029	1	359	PGSGGSAGGRDGSAYQGALLPREQFAAPLGRPVGTSYSATYPA YVSPDVAQSWTAGPFDGSVLHGLPGRRPTFVSDFLEEFPGEGR ECVNCGALSTPLWRRDGTGHYLCNACGLYHKMN
291	1030	2	513	PDHRHGALWWWYSCGVLPVTVSRNEGDERNQVLTLYLWIRQEW TDAYLRWDPNAYGGLDAIRIPSSLVWRPDIVLYNKYCLS/AAP PLSYPSLDLPLAVGV**SPLPTT*PGCHAALEAFPQDPSKLPS TQPLHGTPTLGYPRPAQAERLLGTYCVVQGRCLNHKGLSRAHF
292	1031	1	595	YALTGALVIVTGMVMGNIADYFNLPVSSMSNTFTFLNAGILIS IFLNAWLMEIVPLKTQLRFGFLLMVLAVAGLMFSHSLALFSAA MFILGVVSGITMSIGTFLVTQMYEGRQRGSRLLFTDSFFSMAG MIFPMIAAFLLARSIEWYWVYACIGLVYVAIFILTFGCEFPAL CSHATKLGTASSYPSLDVVQLRTLNA
293	1032	71	479	MAKVGLKTEHYDRYPHMFSGGQRQRIAIARGLMLDPDVVIADE PVSALDVSVRAQVLNLMMDLQQELGLSYVFISHDLSVVEHIAD EVMVMYLGRCVEKGTKDQIFNNPRHPYTQALLSATPRLNPDDR RERIKLSX*
294	1033	2	427	SATLERVLNHPDETQARRLMTLEDIVSGYSNVLISLADSQGKT VYHSPGAPDIREFTRDAIPDKDAQGGEVYLLSGPTMMMPGHGH GHMEHSNWRMINLPVGPLVDGKPIYTLYIALSIDFHLHYINDL MNKLIMTASVII
295	1034	3	342	VLAYPGIKVSTAEARAILPAQYRRQDCIAHGRHLAGFIHACYS RQPELAAKLMKDVIAEPYRERLLPGFRQARQAVAEIGAVASGI SGSGPTLFALCDKPETAQRVADWLGK
296	1035	2	279	GQQQRVALARALILKPKVLLFDEPLSNLDANLRRSMRDKIREL QKQFDITSLYVTHDQSEAFAVSDTVLVMNKGHIMQIGSPQDLR VRRLNW
297	1036	3	157	AVHYLERVRIAEHAHKFPGQISGGQQQRVAIARSLCMKPKIML FDEPTSAL
298	1037	1	217	APYDAENYFDYDNLNNGPSLQHWFGVDSLGRDIFSRVLVGAQI SLAAGVFAVFIGAAIGTLLGLLAGYYEGW
299	1038	3	570	VFCLIADLDPIDELVDFPIVYASALNGIAGLDHEDMAEDMTPL YQAIVDHVPAPDVDLDGPFQMQISQLDYNSYVGVIGIGRIKRG KVKPNQQVTIIDSEGKTRNAKVGKVLGHLGLERIETDLARAGD IVAITGLGELNISDTVCDTQNVEALPALSVDEPTVSMFFCVNT SPFCGKEGKFVTSRQI
300	1039	1	366	QGTRAESQGSSKDKTRLAFAGLKFGDYGSIDYGRNYGVAYDIG AWTDVLPEFGGDTWTQTDVFMTQRATGVATYRNNDFFGLVDGL NFAAQYQGKNDRSDFDNYTEGNGHGFGFSATYEYEG
301	1040	3	201	DTYSVSIPLGATINMAGAAITITVLTLAAVNTLGIPVDLPTAL LLSVVASLCACGASGVAGGSLL

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302	1041	1	140	ANAQQGLPSGITLKLNNLVDKGLVDRLYAASSSGVPVNLLVRG TCS
303	1042	2	442	ARMTLIPGTHLLENIHNIWVNGVGTNSAPFWRMLLNSFVMAFS ITLGKITVSMLSAFAIVWFRFPLRNLFFWMIFITLMLPVEVRI FPTVEVIANLQMLDSYAGLTLPLMASATATFLFRKLNMSGPDK VVPAARISGYGPRVRKQ
304	1043	2	403	CAKCLRDADECPSGAFERIGRDISLDALEREVMKDDIFFRTSG GGVTLSGGEVLMQAEFATRFLQRLRLWGVSCAIETAGDAPASK LLPLAKLCDEVLFDLKIMDATQARDVVKMNLPRVLENLRLLVS EGVN
305	1044	1	346	YLLLFVCFLVMSLLVGLVYKFTAERAGKQSLDDLMNSSLYLMR SELREIPPHDWGKTLKEMDLNLSFDLRVEPLSKYHLDDISMHR LRGGEIVALDDQYTFLQRIPRSHYVLAVG
306	1045	1	207	VELFLSDEGDDVVIEVADQGCGVPESLRDKIFEQGVSTRADEP GEHGIGLYLIASYVTRCGGVITLEDN
307	1046	3	213	DAIIAPDANALPAAAQAAENLKNDKVAIVGFSTPNVMRPYVER GTVKEFGLWDVVQQGKISVYVADALQ
308	1047	1	129	YIVVTGKTHCGTPLTTVTGDATQSGYLTLNLPEMWEVSGYNRV
309	1048	271	46	XEGVEPDINASKTRQQLNDVAGKMKIIEARLSALTNNQTKSLK LNPVALPKVASQLLDELGYSLLARRADLQSAHX*
310	1049	16	253	ENIAEEYATKRYRSNVINWGMLPLQMAEVPTFEVGDYIYIPGI KAALDNPGTTFKGYVIHEDAPVTEITLYMESQEART
311	1050	2	299	LQTEIGSMVYAVKPGDGSAREQAASCQRVIGGLANIAEEYATK RYRSNVINWGMLPLQMAEVPTFEVGDYIYILGFKAAKYSPGTA FTVYAISGYGPRI
312	1051	1	344	TLEDLLMALDGEQHLQQQVSEKVLADNVLIAPGSVKPDATFWS ALIQDRYNVMTCIEKDACVLVEQDLNSDGQAERILFAFNDDRV IVYGFDSDRKEWDALDMSLLPNEITKEK
313	1052	2	630	ESNSRCRKMPGERCRGGPARLSLLLDLPTRPLPHPRQVIDFGS ASIFSEVRYVKEPYIQSRFYRAPEILLGLPFCEKVDVWSLGCV MDELHLGWPLYPGNNEYDQVRYICETQGLPKPHLLHAACKAHH FFKRNPHPDAANPWQLKSSADYLAETKVRPLERRKYMLKSLDQ IETVNGGSVASRLTFPDREALAEHADLKSMVEL/MKRLL
314	1053	1	302	RLVKKRVECRQCGKAGRNQSTLKTHMRSHTGEKPYECDHCGKA FSIGSNLNVHRRIHTGEKPYECLVCGEAFSDHSSLRSHVKTHR GEKLFVSSVWKRLQ
315	1054	1318	730	CGPGFSLSFFFLRWSF\ALVAQAGVQWHDLGSLQPPAPGFKRF SSLSLLSRWDYRHAHARLIFVFLVEMGFLHVGQAGLELPTSGD PPTSASQSARITGVTTPLGTFFFFLRWSFALVAQAGGQCLDLG SLQLPPPGFKRLVCHFQTPQKHRCSCQAPGDCLQESFVMTGCV LRTVSESVQRANAGAGAETVQGL

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
316	1055	2486	1429	MGNAAAAKKGSEQESVKEFLAKAKEDFLKKWESPAQNTAHLDQ FERIKTLGTGSFGRVMLVKHKETGNHYAMKILD*QKVGKLKQI EHTLNEKRILQAVNFPFLVKLEFSFKDNSNLYMVMEYVPGGEM FSHLRRIGRFSEPHARFYAAQIVLTFEYLHSLDLIYRDLKPEN LLIDQQGYIQVTDFGFAKRVKGRTWTLCGTPEYLAPEIILSKG YNKAVDWWALGVLIYEMAAGYPPFFADQPIQIYEKIVSGKVRF PSHFSSDLKDLLRNLLQVDLTKRFGNLKNGVNDIKNHKWFATT DWIAIYQRKVEAPFIPKFKGPGDTS\NFDDYEEEEIRV\SINE KFG\KEFSEF
317	1056	867	461	SSSRSSHGDSPPHSQTPCDTNRGLDTKH*/DSQSIEEKDSSQS E*NRIERRKEVERILQTNSDYM*HWSN*PENILPKKFFSKHQK CTATLSMRNTSIM/KKEGLF*AQFPSLLLSHLPAVGLGIYTGT HLTTSTSTF
318	1057	544	784	TFHSSLEKNILQPCR*RRA\ICLPLLL*PSVPLLAPQYFSDLR NSIVNSQPPEKQQAMHLCFENLMEGIERNLLTKNRDR
319	1058	1606	228	GTSGVQQEISRLTNENLDLKELVEKLEKNERKLKKQLKIYMKK AQDLEAAQALAQSERKRHELNRQVTVQRKEKDFQGMLEYHKED EALLIRNLVTDLKPQMLSGTVPCLPAYILYMCIRHA\DYTNDD LKVHSLLTSTINGIKKVLKKHNDDFEMTSFWLSNTC\RLLHCL KQYSGDEGFMTQNTAKQN\EHCLKNFDLTEYRQV\L\SDLSIQ IYQQLIKIAEGVLQPMIVSAMLEN*SIQGLSGVKPTGSQKHSS SMADEDNSYRLEAIIRQMNAFHTVMCDQGLDPEIILQVFKQLF YMINAVTLNDLLLRKDVCSWSTGMQLRYNISQLEEWLRGRNLH QSGAVQTMEPLIQAAQLLQLKKKTQEDAEAICSLCTSLSTQQI VKILNLYTPLNEFEERVTVAFIRTIQAQLQERNDPQQLLLDAK HMFPVLFPFNPSSLTMDSIHIPACLNLEFLNEV
320	1059	3	250	HEENTILKAAEVQVPPK*VVTPEAKAFI*RCLAYQKEDCIDAQ QLACDP\YLLHYIQKLVFVSSPAGAAIASTFGVSNSCSSN
321	1060	1332	500	GTTDEIMTRWARVSTTYNKRPLPATSWEDMKKGSFEGTSQNLP KRKQLEANRLSLKNDAPQAKHKKNKKKKEYLNEDVNGFMEYLR QNSQMVHNGQIIATDSEEVREEIAVALKKDSRREGRRLKRQAA KKNAMVCFHCRKPGHGIADCPAALENQDMGTGICYRCGSTEHE ITKCKAKVDPALGEFPFAKCFVCGEMGHLSRSCPDNPKGLYAD GGGCKLCGSVEHLKKDCPESQNSERMVTVGRWAKGMSADYEEI LDVPKPQKPKTKIPKVVNF
322	1061	384	102	DHVRKSLLKNRAENIVNIFKCNVVSLPNLPAFGQAQWLTPVIP ALWEAEVGGS*GQEIETILANAVK/SPFLLKIQKKKISRAWWR AP/VSPRYSGG

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
323	1062	1	777	SDAWADAWARSLSVSPSSYPELHTEVPLSVLILGLLVVFILSV CFGAGLFVFVLKRRKGVPSVPRNTNNLDVSSFQLQYGSYNTET HDKTDGHVYNYIPPPVVQMCQNPIYMAGREGRPSSLLPKPGKE FQLLGNLEEKKEEPATPAYTISATELLEKQATPREPELLYQNI AE/PSQGTS/TAQA*STITFVPYLKGQFAPSYESRRQNQDRIN KTVLYGTPRKCFVGQSKPNHPLLQAKPQSEPDYLEVLEKQTAI SQL
324	1063	1	1496	ALCHIAVGQQMNLHWLHKIGLVVILASTVVAMSAVAQLWEDEW EVLLISLQGTAPFLHVGAVAAVTMLSWIVAGQFARAERTSSQV TILCTFFTVVFALYLAPLTISSPCIMEKKDLGPKPALIGHRGA PMLAPEHTLMSFRKALEQKLYGLQADITISLDGVPFLMHDTTL RRTTNVEEEFPELARRPASMLNWTTLQRLNAGQWFLKTDPFWT ASSLSPSDHREAQNQSICSLAELLELAKGNATLLLNLRDPPRE HPYRSSFINVTLEAVLHSGFPQHQVMWLPSRQRPLVRKVAPGF QQTSGSKEAVASLRRGHIQRLNLRYTQVSRQELRDYASWNLSV NLYTVNAPWLFSLLWCAGVPSVTSDNSHTLSQVPSPLWIMPPD EYCLMWVTADLVSFTLIVGIFVLQKWRLGGIRSYNPEQIMLSA AVRRTSRDVSIMKEKLIFSEISDGVEVSDVLSVCSDNSYDTYA NSTATPVGPRGGGSHTKTLIERSGR
325	1064	1899	776	NSADYGDGPDSSDADPDSGTEEGVLDFSDPFSTEVKPRILLMG LRRSGKSSIQKVVFHKMSPNETLFLESTNKICREDVSNSSFVN FQIWDFPGQIDFFDPTFDYEMIFRGTGALIFVIDSQDDYMEAL ARLHLTVTRAYKVNTDINFEVFIHKVDGLSDDHKIETQRDIHQ RANDDLADAGLEKIHLSFYLTSIYDHSIFEAFSKVVQKLIPQL PTLENLLNIFISNSGIEKAFLFDVVSKIYIATDSTPVDMQTYE LCCDMIDVVIDISCIYGLKEDGAGTPYDKESTAIIKLNNTTVL YLKEVTKFLALVCFVREESFERKGLIDYNFHCFRKAIHEVFEV RMKVVKSRKVQNRLQKKKRATPNGTPRVLL
326	1065	1181	346	RTRGRDPGAGFRRTANKRCCRRRFLIGCGWLPLRSDWPLVSKM LSKGLKRKREEEEEKEPLAVDSWWLDPGHAAVAQAPPAVASSS LFDLSVLKLHHSLQQSEPDLRHLVLVVNTLRRIQASMAPAAAL PPVPSPPAAPSVADNLLASSDAALSASMASLLEDLSHIEGLSQ APQPLADEGPPGRSIGGAAPSLGALDLLGPATGCLLDDGLEGL FEDIDTSMYDNELWAPASEGLKPGPEDGPGKEEAPELDEAELD YLMDVLVGTQALERPPGPGR

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327	1066	1844	337	LQEVKARRNTLHKEKDHLVNDYEQNMKLLQTKYDADINLLKQE HALSASKASSMIEELEQNVCQLKQQLQESELQRKQQLRDQENK FQMEKSHLKHIYEKKAHDLQSELDKGKEDTQKKIHKFEEALKW KKWRQI*LDPN/LLREKQSKEFLWQLEDIRQRYEQQIVELKLE HEQEKTHLLQQHNAEKDSLVRDHEREIENLEKQLRAANMEHEN QIQEFKKRDAQVIADMEAQVHKLREELINVNSQRKQQLVELGL LREEEKQRATREHEIVVNKLKAESEKMKIELKKTHAAETEMTL EKANSKLKQIEKEYTQKLAKSSQIIAELQTTISSLKEENSQQQ LAAERRLQDVRQKFEDEKKQLIRDNDQAIKVLQDELENRSNQV RCAEKKLQHKELESQEQITYIRQEYETKLKGLMPASLRQELED TISSLKSQVNFLQKRASILQEE/RDYISRQKVQPISR*LHERM QRMRISRLCCGTSSSRFEDLDIVNCEISGIF
328	1067	1149	238	VINLVYLISSPRPELKPVDKESEVVMKFPDGFEKFSPPILQLD EVDFYYDPKHVIFSRLSVSADLESRICVVGENGAGKSTMLKLL LGDLAPVRGIRHAHRNLKIGYFSQHHV\EQL\DLNVQCLWELA GHASFPG\RPEEEY\RHQLGFGMGISGEL\AMRPLCQPVLGAR KKPKWPFAQMDYCPAPTFYIL\DEPTN\HLGHGRAIEALGPCL QTISGVGVILVSHE*SALSRLVCRE\LWVC*G\GGVTRVERKD FDQYRALLQGTVSAREGFPLGPPRLKDSPRDMGLVSQTPWGHH VGYPLPGRG
329	1068	26	·674	CSAVEVKMAARTAFGAVCRRLWQGLGNFSVNTSKGNTAKNGGL LLSTNMKWVQFSNLHVDVPKDLTKPVVTISDEPDILYKRLSVL VKGHDKAVLDSYEYFAVLAAKELGISIKVHEPPRKIERFTLLQ SVHIYKKHRVQYEMRTLYRCLELEHLTGSTADVYLEYIQRNLP EGVAMEVTKFCFFIFL\TQLEQLPEHIKEPIWETLSEEKEESK S
330	1069	2105	1283	DFWDTAGQERFQSMHASYYHKTHACIMVFDVQRKVTHRNLSTW YTELREFRPEIPCIVVANKIDGGAIPAPGC*QFTGDLPSYISS SIPRAGNLQ*LVLPPTIRYNPWLVACILPTL*RSQLSRPALFP RHRSLLTELFLGPVSQSSLPIPLSGMKASSGPPLQTFFPSLDR QTNVLPSLY\ADINVTQKSFNFAKKFSLPLYFVSAADGTNVVK LFNDAIRLAVSYKQNSQDFMDEIFQELENFSLEQEEEDVPDQE QSSSIETPSEEVASPHS
331	1070	1	1109	GATPLGSVGGRTGKMDAATLTYDTLRFAEFEDFPETSEPVWIL GRKYSIFTEKDEILSDVASRLWFTYRKNFPAIGGTGPTSDTGW GCMLRCGQMIFAQALVCRHLGRDWRWTQRKRQPDSYFSVLNAF IDRKDSYYSIHQIAQMGVGEGKSIGQWYGPNTVAQVLKKLAVF DTWSSLAVHIAMDNTVVMEEIRRLCRTSVPCAGATAFPADSDR HCNGFPAGAEVTNRPSPWRPLVLLIPLRLGLTDINEAYVETLK HCFM\MPQSLGVIGGKPNSAH\YFIG*VG\EELIYLDPHTTQP AVEPTDGCFIPDESFHCQHPPCRMSIAELDPSIAVVRGGHLST QAFGAECCLGMTRKTFGFLRFFFSMLG
332	1071	39	284	ALCVVPFNTFHN\DFLLLDKEGTLDPVMDSFSTHWTTIGPADM FFS\FRQHYKNFKSHGTNPSKSVWAHATCQSCAFPNLLGW

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333	1072	2	1484	TRLAEFGTRDPCAQAPCEQQCEPGGPQGYSCHCRLGFRPAEDD PHRCVDTDECQIAGVCQQMCVNYVGGFECYCSEGHELEADGIS CSPAGAMGAQASQDLGDELLDDGEDEEDEDEAWKAFNGGWTEM PGILWMEPTQPPDFALAYRPSFPEDREPQIPYPEPTWPPPLSA PRVPYHSSVLSVTRPVVVSATHPTLPSAHQPPVIPATHPALSR DHQIPVIAANYPDLPSAYQPGILSVSHSAQPPAHQPPMISTKY PELFPAHQSPMFPDTRVAGTQTTTHLPGIPPNHAPLVTTLGAQ LPPQAPDALVLRTQATQLPIIPTAQPSLTTTSRSPVSPAHQIS VPAATQPAALPTLLPSQSPTNQTSPISPTHPHSKAPQIPREDG PSPKLALWLPSPAPTAAPTALGEAGLAEHSQRDDRWLLVALLV PTCVFLVVLLALGIVYCTRCGPHAPNKRITDCYRWVIHAGSKS PTEPMPPRGSLTGVQTCRTSV
334	1073	1	1406	LRVRRRPHLPAPPALRARRSDRRSSRAPAAFPPRPPHASPAPG PAMAQAVWSRLGRILWLACLLPWAPAGVAAGLYELNLTTDSPA TTGAVVTISASLVAKDNGSLALPADAHLYRFHWIHTPLVLTGK MEKGLSSTIRVVGHVPGEFPVSVWVTAADCWMCQPVARGFVVL PITEFLVGDLVVTQNTSLPWPSSYLTKTVLKVSFLLHDPSNFL KTALFLYSWDFGDGTQMVTEDSVVYYNYSIIGTFTVKLKVVAE WEEVEPDATRAVKQKTGDFSASLKLQETLRGIQVLGPTLIQTF QKMTVTLNFLGSPPLTVCWRLKPECLPLEEGECHPVSVASTAY NLTHTFRDPGDYCFSIRAENIISKTHQYHKIQVWPSRIQPAVF AFPCATLITVMLAFIMYMTLRNATQQKDMVENPEPPSGVRCCC QMCCGPFLLETPSEYLEIVRENHGLLPPLYKSVKTYTV
335	1074	1	866	VVEFAFQLSSVSVCLTVSFGWQLGTVSSCLSRDWFLKGNLLII IVSVLIILPLALMKHLGYLGYTSGLSLTCMLFFLVSVIYKKFQ LGCAIGHNETAMESEALVGLPSQGLNSSCEAQMFTVDSQMSYT VPIMAFAFVCHPEVLPIYTELCRPSKRRMQAVANVSIGAMFCM YGLTATFGYLTFYSSVKAEMLHMYSQKDPLILCVRLAVLLA\V TLTVPVVLFPIRRALQQLLFPGKAFSWPRHVAIALILLVLVNV LVICVPTIRDIFGVIGSTSAPSLIFILPSCI
336	1075	3	825	GAGSKSSMMQLMHLESFYEK\PPPGLIKEDDTKPEDCIPDVPG NEHAREFLAHTPTKGLWMPLEKEVKVKH/CTFHWIAS*FLGDG KFIPKATRLKDVWVSN*FTCLFWDLTRFIHDCIFF*NWSLMNK NFNIIY*FFISLR*NTLILQKYFPFSLLLGWHCKWYGHRTGYK ECPFFIKDNQKLQQFRVAHEDFMYDIIRDNKQHEKNVRIQQLK QLLEDSTSGEDRSSSSSEGKEKHKKKKKKEKHKKRKKEKKKK KKRKHKSSKSNEGSDSE

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
337	1076	3	2451	EIAGAAAENMLGSLLCLPGSGSVLLDPCTGSTISETTSEAWSV EVLPSDSEAPDLKQEERLQELESCSGLGSTSDDTDVREVSSRP STPGLSVVSGISATSEDIPNKIEDLRSECSSDFGGKDSVTSPD MDEITHDFLYILQPKQHFQHIEAEADMRIQLSSSAHQLTSPPS QSESLLAMFDPLSSHEGASAVVRPKVHYARPSHPPPDPPILEG AVGGNEARLPNFGSPMF*LPAEMEAFKQRHS/YTPERLVRSRS S\DIVSSVRRPMSDPSWNRRP\GNEERELPPAAAIGATSLVAA PHSSSSSPSKDSSRGETEERKDSDDEKSDRNRPWWRKRFVSAM PKAPIPFRKKEKQEKDKDDLGPDRFSTLTDDPSPRLSAQAQVA EDILDKYRNAIKRTSPSDGAMANYESTEVMGDGESAHDSPRDE ALQNISADDLPDSASQAAHPQDSAFSYRDAKKKLRLALCSADS VAFPVLT\HSTRNGLPDHTDPEDNEIVCFLKVQIAEAINLQDK NLMAQLQETMRCVCRFDNRTCRKLLASIAEDYRKRAPYIAYLT RCRQGLQTTQAHLERLLQRVLRDKEVANRYFTTVCVRLLLESK EKKIREFIQDFQKLTAADDKTAQVEDFLQFLYGAMAQDVIWQN ASEEQLQDAQLAIERSVMNRIFKLAFYPNQDGDILRDQVLHEH IQRLSKVVTANHRALQIPEVYLREAPWPSAQSEIRTISAYKTP RDKVQCILRMCSTIMNLLSLANEDSVPGADDFVPVLVFVLIKA NPPCLLSTVQYISSFYASCLSGEESYWWMQFTAAVEFIKTIDD RK
338	1077	536	1305	WPMSLARGHGDTAASTAAPLSEEGEVTSGLQALAVEDTGGPSA SAGKAEDEGEGGREETEREGSGGEEAQGEVPSAGGEEPAEEDS EDWCVPCSDEEVELPADGQPWMPPPSEIQRLYELLAAHGTLEL QAEILPRRPPTPEAQSEEERSDEEPEAKEEEEEKPHMPTEFDF DDEPVTPKDSLIDRRRTPGSSARSQKREARLDKVLSDMKRHKK LEEQILRTGRDLFSLDSEDPSPASPPLRSSGSSLFPRQRKY
339	1078	2	1771	LGRGTFGQVV*CWKRGTNEIVAIKILKNHPSYARQGQIEVSIL ARLSTESADDYNFVRAYECFQHKNHTCLVFEMLEQNLYDFLKQ NKFSPLPLKYIRPVLQQVATALMKLKSLGLIHADLKPENIMLV DPSRQPYRVKVIDFGSASHVSKAVCSTYLQSRYYRAPEIILGL PFCEAIDMWSLGCVIAELFLGWPLYPGASEYDQI/RYISQTQG LPAEYLLSAGTKTTRFFNRDTDSPYPLWRLKTPDDHEAETGIK SKEARKYIFNCLDDMAQVNMTTDLEGSDMLVEKAVRREFIDLL KKMLSIDSVKRFSPVGSLNHPFVTMSLFLDFPHSTHVKSCFQN MEICKRRVNMYDTVNQSKTPFITHVAPSTSTNLTMTFNNQLTT VHNQPSAASMAAVAQRSMPLQTGTAQICARPDPFQQALIVCPP GFQGLQASPSKHAGYSVRMENAVPIVTQAPGAQPLQIQPGLLA QQAWPSGTQQILLPPAWQQLTGVATHTSVQHAAVIPETMAGTQ QLADWRNTHAHGSHYNPIMQQPALLTGHVTLPAAQPLNVGVAH VMRQQPTSTTSSRKSKQHLYCGRARVSKIASR

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
340	1079	2	2721	EFAICRYPLGMSGGQIPDEDITASSQWSESTAAKYGRLDSEEG DGAWCPEIPVEPDDLKEFLQIDLHTLHFITLVGTQGRHAGGHG IEFAPMYKINYSRDGTRWISWRNRHGKQVLDGNSNPYDIFLKD LEPPIVARFVRFIPVTDHSMNVCMRVELYGCVWLDGLVSYNAP AGQQFVLPGGSIIYLNDSVYDGAVGYSMTEGLGQLTDGVSGLD DFTQTHEYHVWPGYDYVGWRNESATNGYIEIMFEFDRIRNFTT MKVHCNNMFAKGVKIFKEVQCYFRSEASEWEPNAISFPLVLDD VNPSARFVTVPLHHRMASAIKCQYHFADTWMMFSEITFQSDAA MYNNSEALPTSPMAPTTYDPMLKVDDSNTRILIGCLVAIIFIL LAIIVIILWRQFWQKMLEKASRRMLDDEMTVSLSLPSDSSMFN NNRSSSPSEQGSNSTYDRIFPLRPDYQEPSRLIRKLPEFAPGE EESGCSGVVKPVQPSGPEGVPHYAEADIVNLQGVTGGNTYSVP AVTMDLLSGKRCGCGREFPPGKLLTFKEKLGEGQFGEVHLCEV EGMEKFKDKDFALDVSANQPVLVAVKMLRADANKNARNDFLKE IKIMSRLKDPNIIHLLSVCITDDPLCMITEYMENGDLNQFLSR HEPPNSSSSDVRTVSYTNLKFMATQIASGMKYLSSLNFVHRDL ATRNCLVGKNYTIKIADFGMSRNLYSGDYYRIQGRAVLPIRWM SWESILLGKFTTASDVWAFG\VTLWE\TFTFCQRKGPYS\QLS \DETGY*RNTGEFFPRPKGGQTYLPSTSPFVPDSCVIKLMLSC WRRDTKNRPSFQEIHLLLLQQGDERCCQCLAMFLRLRSSLQDL PLTHAYATPSGHLMKLRDRGLFALPSFPGHPHSLPLTHIYFFF FTLKN
341	1080	916	3	CSASPLRPGLLAPDLLYLPGAGQPRRPEAEPGQKPVVPTLYVT EAEAHSPALPGLSGPQPKWVEVEETIEVRVKKMGPQGVSPTTE VPRSSSGHLFTLPGATPGGDPNSNNSNNKLLAQEAWAQGTAMV GVREPLVFRVDARGSVDWAASGMGSLEEEGTMEEAGEEEGEDG DAFVTEESQDTHSLGDRDPKILTHNGRMLTLADLEDYVPGEGE TFHCGGPGPGAPDDPPCEVSVIQREIGEPTVG\SLCCSAWGMH WVPEALSASLGLSPMGR\HHRDPRSVALRAPPSSCGRPRLGLW AVLPG
342	1081	862	444	QGLAAEFLQVPAVTRAYTAACVLTTAAVQLELLSPFQLYFNPH LVFRKFQAPFLPWALMGFSLLLGNSILVDLLGIAVGHIYYFLE DVFPNQPGGKRLLQTPGFLGLQSSKAPAGSSLTIWTQQSQGGP GTAGELAAPS

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343	1082	3658	337	EKNALEPTVYFGMGV*APQVPRFQQRITGYQYYLQLRKDIWEE GIPCTLEQPIHLAGLAVQAIFGDFDQYESQDFLQKFALFPVGW LQDEKVLEEATQKVALLHQKYRGLTAPDAEMLYMQEVERMDGY GEESYPAKDSQGSDISIGACLEGIFVKHKNGRHPVVFRWHDIA NMSHNKSFFALELANKEETIQFQTEDMETAKYIWRLCVARHKF YRLNQCNLQTQTVTVNPIRRRSSSRMSLPKPQPYVMPPPP\QL HYNGHYTEPYASSQDNLFVPNQEG\YYGQFQTSLNRAQIDFNG RIR\NASVYSAHSTNSLNNPQPYLQPSPMSSNPSITGSDVMRP DYLPSHRHSAVIPPSYRPTPDYETVMKQLNRGLVHAERQSHSL RNLNIGSSYAYSRPAALVYSQPEIREHAQLPSPAAAHCPFSLS YSFHSPSPYPYPAERRPVVGAVSVPELTNAQLQAQDYPSPNIM RTQVYRPPPPYPPPRPANSTPDLSRHLYISSSNPDLITRRVHH SVQTFQEDSLPVAHSLQEVSEPLTAARHAQLHKRNSIEVAGLS HGLEGLRLKERTLSASAAEV\APRAVSVGSQP\SVFTERTQRE GPEEAEGLRYGHKKSLSDATMLIHSSEEEEDEDFEEESGARAP PARAREPRPGLAQDPPGCPRVLLAGPLHILEPKAHVPDAEKRM MDSSPVRTTAEAQRPWRDGLLMPSMSESDLTTSGRYRARRDSL KKRPVSDLLSGKKNIVEGLPPLGGMKKTRVDAKKIGPLKLAAL NGLSLSRVPLPDEGKEVATRATNDERCKILEQRLEQGMVFTEY ERILKKRLVDGECSTARLPENAERNRFQDVLPYDDVRVELVPT KENNTGYINASHIKVSVSGIEWDYIATQGPLQNTCQDFWQMVW EQGIAIIAMVTAEEEGGREKSFRYWPRLGSRHNTVTYGRFKIT TRFRTDSGCYATTGLKMKHLLTGQERTVWHLQYTDWPEHGCPE DLKGFLSYLEEIQSVRRHTNSTSDPQSPNPPLLVHCSAGVGRT GVVILSEIMIACLEHNEVLDIPRVLDMLR\QQRMMLVQTLCQY TFVYRVLIQVPEKAPRLILSSPQFPYGAQSCEAFTA
344	1083	6	304	RKKQKLAEE*VELSKLADLKDAEAVQKFFLEEI*L\GEEILAK GVDHLTNPSAVCGQPQWLLQVLQQTLPLPVIQMLLTKPLPVNQ RLVSAG/SLAKDDVE
345	1084	1255	635	SFCLHEFGWLGSSPQSDHPVPALLGLGAFVHHSLLQVHSSPGA GPVSFLFLGESCSPVDEPRCVPSCAFGFLSCFPLLNSAALERG LFFFVVFFFLESGSCQVARAGVRD/RDRGSLQPPPPGLKQFCL SLPSRWDHRHPPPLRVP*FVFVFLVELGFHHVAQAGLKLLTLS DPPAPASHSAGITGVSQRDQPVLFLRWASCSELVG
346	1085	116	415	EGFPGRSLSGGLCCRLRRRFPIDGYRPRRRRRWSCCPSGVRPV RRMSQKSWIESTLTKRECVYIIPSSKDPHRCLPGCQICQQLVR RGFTVLARMVSIS
347	1086	918	760	QNSTCLTAQTHSLLQHQPLQLTTLLDQYIREQREKDSVMSANG KPDPDTVPDS

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348	1087	1	750	LNPWKNALQDFCLPFLRITSLLQHHLFGEDLPSCQEEEEFSVL ASCLGLLPTFYQTEHPFISASCLDWPVPAFDIITHWCFEIKSF TERHAEQGKALLIQESKWKLPHLLQLPENYNTIFQYYHRKTCS VCTKVPKDPAVCLVCGTFVCLKGLCCKQQSYCECVLHSQNCGA GTGIFLLINASVIIIIRGHRFCLWGSVYLDAHGEEDRDLRRGK PLYICKERYKVLEQQWISHTFDHINKRWGPHYNGL
349	1088	3	1374	KGQLVNLLPPENFPWCGGSQGPRMLRTCYVLCSQAGPRSRGWQ SLSFDGGAFHLKGTGELTRALLVLRLCAWPPLVTHGLLLQAWS RRLLGSRLSGAFLRASVYGQFVAGETAEEVKGCVQQLRTLSLR PLLAVPTEEEPDSAAKSGEAWYEGNLGAMLRCVDLSRGLLEPP SLAEASLMQLKVTALTSTRLCKELASWVRRPGASLELSPERLA EAMDSGQNLQVSCLNAEQNQHLRASLSRLHRVAQYARAQHVRL LVDAEYTSLNPALSLLVAALAVRWNSPGEGGPWVWNTYQACLK DTFERLGRDAEAAHRAGLAFGVKLVRGAYLDKERAVAQL\HG\ MEDPPTQADYEATS\QSYS\RCLELMLTHVARHGPMCHLMVAS HNEESVRQATK\GQAGYVVYKSIPYGSLEEVIPYLIRRAQENR SVLQGARREQELLSQKLWRRLLPGCRRIPH
350	1089	1036	306	VVEFGEMSTARAPEGLRWFQLYVHPDLQLNKQLIQRVESLGFK ALVITLDTPVCGNRRHDIRNQLRRNLTLTDLQSPKKGNAIPYF QMTPISTSLCWNDLSWFQSITRLPIILKGILTKEDAELAVKHN VQGIIVSNHGGRQLDEVLASIDALTEVGAAE*GNMKYYLDAGV RTGNDVQKALALGAKCIFLGRPILWGLACKGEHGVKEVLNILT NEFHTSMA\LTGCRSVAEINRNLVQFSRL
351	1090	1229	957	FFLRWSFTL\LPRLE/CQWLNLGSLQPPPPGFK*SSCLRLLSS WGLQVPTSMLG*FFCIFSREGISPCWPGWSQTPKVIHLPRPPR VLRLQA
352	1091	1145	365	LLCFVHTALQSFQGELYEPHVVIAIVVFLVKLGICK*RASWRK KVTLVVK*S/LKICFTKYGSCYHPGEKSSSWLFN*RMVNDCLA TSCSNRSFVIQQIPSSNLFMVVVDSSCLCESVAPITMAPIEIR YILLCAGPLTTTETSKGYQW*GNLGEKY*RRKITSFPLLERES S*ESCHCQILTSEMQSRKKQSLETCLNYSQHNESLKCERLKAQ KIRRRPESCHGFHPEENARECGGAPSLQAQTVLLLLPLLLMLF SR
353	1092	1140	790	VPSPTHDPKPAEAPMPA*PAPPGPASPGGALEPPAAARAGGSP TAVRSILTKERRPEGGYKAVWFGEDIGTEADVVVLNAPTLDVD GASDSGSGDEGEGAGRGGGPYDAPGGDDSYI

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354	1093	3	2293	LISLAGPTDDIQSTGPQVHALNILRALFRDTRLGENIIPYVAD GAKAAILGFTSPVWAVRNSSTLLFSALITRIFGVKRAKDEHSK TNRMTGREFFSRFPELYPFLLKQLETVANTVDSDMGEPNRHPS MFLLLLVLERLYASPMDGTSSALSMGPFVPFIMRCGHSPVYHS REMAARALVPFVMIDHIPNTIRTLLSTLPSCTDQCFRQNHIHG TLLQVFHLVQAYSDSKHGTNSDFQHELTDITVCTKAKLWLAKR QNPCLVTRAVYIDILFLLTCCLNRSAKDNQPVLESLGFWEEVR GIISGSELITGFPWAFKVPGLPQYLQSLTRLAIAAVWAAAAKS GERETNVPISFSQLLESAFPEVRSLTLEALLEKFLAAASGLGE KGVPPLLCNMGEKFLLLAMKENHPECFCKILKILHCMDPGEWL PQTEHCVHLTPKEFLIWTMDIASNERSEIQSVALRLASKVISH HMQTCVENRELIAAELKQWVQLVILSCEDHLPTESRLAVVEVL TSTTPLFLTNPHPILELQDTLALWKCVLTLLQSEEQAVRDAAT ETVTTAMSQENTCQSTEFAFCQVDASIALALALAVLCDLLQQW DQLAPGLPILLGWLLGESDDLVACVESMHQVEEDYLFEKAEVN FWAETLIFVKYLCKHLFCLLSKSGWRPPSPEMLCHLQRMVSEQ C\HLLSQFFRELPPAAEFVKTVEFTRLRIQEERTLACLRLLAF LEGKEGEDTLVLSVWDSYAESRQLTLPRTEAAC
355	1094	25	1265	HAFRPIALQRGVSFRGCSNQYAESRRLQGESGSRAFAHLMESL LQHLDRFSELLAVSSTTYVSTWDPATVRRALQWARYLRHIHRR FGRHGPIRTALERRLHNQWRQEGGFGRGPVPGLANFQALGHCD VLLSLRLLENRALGDAARYHLVQQLFPGPGVRDADEETLQESL ARLARRRSAVHMLRFNGYRENPNLQEDSLMKTQAELLLERLQE VGKAEAERPARFLSSLWERLPQNNFLKVIAVALLQPPLSRRPQ EELEPGIHKSPGEGSQVLVHWLLGNSEVFAAFCRALPAGLLTL VTSRHPALSPVYLGLLTDWGQRLHYDLQKGIWVGTESQDVPWE ELHNRFQSLCQAPPPLKDKVLTALETCKAQDGDFEEPGLSIWT DLLLALRSGAFRKRQVLGLSAGLSSV
356	1095	3	1027	SHLIQHQRIHT*E*AHECNECGKAFSQTSCLIQHHKMHRKEKS YECNEYEGSFSHSSDLILQQEVLTRQKAFDCDVWEKNSSQRAH LVQHQSIHTKE/K/PHECNEDGKIF/NQIQA/LIQHLRVHTRE K\YVCTACGKAFSHSSAIAQHQIIHTREKPSECDE*RKGISVK LLIDSC/RIYTSEKSYKCIECGKFFMLLVFSYLSHIWRIHMGI KFHCCNECEKAISQRNYLV*YQIHAMQKDYKCN/EACMCVRRF SHNPTLIQHQRIYT*ENLFGCSK/C/GRSFNRSLTSLCHIRIS I/RRQEFDVTQMEKLDTTFQA/STQHRNNGEKIVDYLFMKLLI HSPNLFHCTKI
357	1096	2638	2867	AVTLTAKICSFTPEPSETMSPPAGTNNSRHAALRAVTLPVKVC SFTPEPARSRTHQKEETPNTSEHQKEQTPEAPP

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358	1097	4747	4550	MAYSWQTDPNPNESHEKQYEHQEFLFVNQPHSSSQVSLGFDQI VDEISGKIPHYESEIDENTFFVPTAPKWDSTGHSLNEAHQISL NEFTSKSRELSWHQVSKAPAIGFSPSVLPKPQNTNKECSWGSP IGKHHGADDSRFSILAPSFTSLDKINLEKELENENHNYHIGFE SSIPPTNSSFSSDFMPKEENKRSGHVNIVEPSLMLLKGSLQPG MWESTWQKNIESIGCSIQLVEVPQSSNTSLASFCNKVKKIRER YHAADVNFNSGKIWSTTTAFPYQLFSKTKFNIHIFIDNSTQPL HFMPCANYLVKDLIAEILHFCTNDQLLPKDHILSVWGSEEFLQ NDHCLGSHKMFQKDKSVIQLHLQKSREAPGKLSRKHEEDHSQF YLNQLLEFMHIWKVSRQCLLTLIRKYDFHLKYLLKTQENVYNI IEEVKKICSVLGCVETKQITDAVNELSLILQRKGENFYQSSET SAKGLIEKVTTELSTSIYQLINVYCNSFYADFQPVNVPRCTSY LNPGLPSHLSFTVYAAHNIPETWVHRINFPLEIKSLPRESMLT VKLFGIACATNNANLLAWTCLPLFPKEKSILGSMLFSMTLQSE PPVEMITPGVWDVSQPSPVTLQIDFPATGWEYMKPDSEENRSN LEEPLKECIKHIARLSQKQTPLLLSEEKKRYLWFYRFYCNNEN CSLPLVLGSAPGWDERTVSEMHTILRRWTFSQPLEALGLLTSS FPDQEIRKVAVQQLDNLLNDELLEYLPQLVQAVKFEWNLESPL VQLLLHRSLQSIQVAHRLYWLLKNAENEAYFKSWYQKLLAALQ FCAGKALNDEFSKEQKLIKILGDIGERVKSASDHQRQEVLKKE IGRLEEFFQDVNTCHLPLNPALCIKGIDHDACSYFTSNALPLK ITFINANLMGKNISIIFKAGDDLRQDMLVLQLIQVMDNIWLQE GLDMQMIIYRCLSTGKDQRLVQMVPDAVTLAKIHRHSGLIGPL KENTIKKWFSQHNHLKADYEKALRNFFYSCAGWCVVTFILGVC DRHNDNIMLTKSGHMFHIDFGKFLGHAQTFGGIKRDRAPFIFT SEM\EYFITEGG\KNPQHFQDFV\ELCCRAYNIIRKHSQLLL\ NLL\EMMLYAG\LPELSGI\QDLKYVYNNLRPQDTDLEATSHF TKKIKESLECFPVKLNNLIHTLAQMSAISPAKSTSQTFPQESC LLSTTRSIERATILGFSKKSSNLYLIQVTHSNNETSLTEKSFE QFSKLHSQLQKQFASLTLPEFPHWWHLPFTNSDHRRFRDLNHY MEQILNVSHEVTNSDCVLSFFLSEAGQQTVEESSPVYLGEKFP DKKPKVQLVISYEDVKLTILVKHMKNIHLPDGSAPSAHVEFYL LPYPSEVRRRKTKSVPKCTDPTYNEIVVYDEVTELQGHVLMLI VKSKTVFVGAINIRLCSVPLDKEKWYPLGNSII*PLLLFYTSN FMQSVLH
359	1098	679	346	FFLRWSLDSVTQAGVQSHDLSSLQPPPPGFKQSSLFGLPSSWE *RWVPPCPANFFVFLVETGFRHVGQAGLELLTSNDLPVSACQS AGITGVTTVPQRKSMILYEVTICYP

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360	1099	2	1601	FVREIRGPAVPRLTSAEDRHRHGPHAHSPELQRTGRDYSLDYL PFRLWVGIWVATFCLVLVATEASVLVRYFTRFTEEGFCALISL IFIYDAVGKMLNLTHTYPIQKPGSSAYGCLCQYPGPGGNESQW IRTRPKDRDDIVSMDLGLINASLLPPPECTRQGGHPRGPGCHT VPDIAFFSLLLFLTSFFFAMALKCVKTSRFFPSVVRKGLSDFS SVLAILLGCGLDAFLGLATPKLMVPREFKPTLPGRGWLVSPFG ANPWWWSVAAALPALLLSILIFMDQQITAVILNRMEYRLQKGA GFHLDLFWVAVLMLLTSALGLPWYVSATVISLAHMDSLRRESR ACAPGERPNFLGIREQRLTGLVVFILTGASIFLAPVLKFIPMP VLYGIFLYMGVAALSSIQFTNRVKLLL\MPAKHQPDLLLLRHV PLTRVHLFTAISFA\CLGLLW\IIKSTPAAIIFPLMLLGLVGV RKALERVFSPQELLWLDELMPEEERSIPEKGLEPEHSFSGSDS EDSELMYQPKAPEINISVN*LE*EFVREIRGPAVPRLTSAEDR HRHGPHAHSPELQRTGRDYSLDYLPFRLWVGIWVATFCLVLVA TEASVLVRYFTRFTEEGFCALISLIFIYDAVGKMLNLTHTYPI QKPGSSAYGCLCQYPGPGGNESQWIRTRPKDRDDIVSMDLGLI NASLLPPPECTRQGGHPRGPGCHTVPDIAFFSLLLFLTSFFFA MALKCVKTSRFFPSVVRKGLSDFSSVLAILLGCGLDAFLGLAT PKLMVPREFKPTLPGRGWLVSPFGANPWWWSVAAALPALLLSI LIFMDQQITAVILNRMEYRLQKGAGFHLDLFCVAVLMLLTSAL GLPWYVSATVISLAHMDSLRRESRACAPGERPNFLGIREQRLT GLVVFILTGASIFLAPVLKFIPMPVLYGIFLYMGVAALSSIQF TNRVKLLLDASKTPARPATLAACASDQGPPLHSHQLCPVWGCF GIIKSTPAAIIFPLMLLGLVGVRKALERVFSPQELLWLDELMP EEERSIPEKGLEPEHSFSGSDSEDSELMYQPKAPEINISVN

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361	1100	1	2636	MGLKARRAAGAAGGGGDGGGGGGGAANPAGGDAAAAGDEERKV GLAPGDVEQVTLALGAGADKDGTLLLEGGGRDEGQRRTPQGIG . LLAKTPLSRPVKRNNAKYRRIQTLIYDALERPRGWALLYH\AL VFLIVLG\CLILAVL\TTFKEYETVSGDWLLLLETFAIFIFGA EFALRIWAAGCCCRYKGWRGRLKFARKPLCMLDIFVLIASVPV VAVGNQGNVLATSLRSLRFLQILRMLRDGPGEGGTWKLLG\SA ICAHSKELITAWYIGFLTLILSSFLVYLVEKDVPEVDAQGEEM KEEFETYADALWWGLITLATIGYGDKTPKTWEGRLIAATFSLI GVSFFALPAGILGSGLALKVQEQHRQKHFEKRRKPAAELIQAA WRYYATNPNRIDLVATWRFYESVVSFPFFRKEQLEAASSQKLG LLDRVRLSNPRGSNTKGKLFTPLNVDAIEESPSKEPKPVGLNN KERFRTAFRMKAYAFWQSSEDAGTGDPMAEDRGYGNDFPIEDM IPTLKAAIRAVRILQFRLYKKKFKETLRPYDVKDVIEQYSAGH LDMLSRIKYLQTRIDMIFTPGPPSTPKHKKSQKGSAFTFPSQQ SPRNEPYV\ARPST\SEI\EDQRH*WGKFVKSLKGQV\QGLGR KLDFLVDMHMQHMERLQVQVTEYYPTKGTSSPAEAEKKEDNRY SDLKTIICNYSETGPPEPPYSFHQVTIDKVSPYGFFAHDPVNL PRGGPSSGKVQATPPSSATTYVERPTVLPILTLLDSRVSCHSQ ADLQGPYSDRISPRQRRSITRDSDTPLSLMSVNHEELERSPSG FSISQDRDDYVFGPNGGSSWMREKRYLAEGETDTDTDPFTPSG SMP\LSSTGDGISDSVWTPSNKPI

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362	1101	1	5433	RTRGIIEFDPKYTAFEVEEDVGLIMIPVVRLHGTYGYVTADFISQSSSASPGG VDYILHGSTVTFQHGQNLSFINISIIDDNESEFEEPIEILLTGATGGAVLGRH LVSRIIIAKSDSPFGVIRFLNQSKISIANPNSTMILSLVLERTGGLLGEIQVN WETVGPNSQEALLPQNRDIADPVSGLFYFGEGEGGVRTIILTIYPHEEIEVEE TFIIKLHLVKGEAKLDSRAKDVTLTIQEFGDPNGVVQFAPETLSKKTYSEPLA LEGPLLITFFVRRVKGTFGEIMVYWELSSEFDITEDFLSTSGFFTIADGESEA SFDVHLLPDEVPEIEEDYVIQLVSVEGGAELDLEKSITWFSVYANDDPHGVFA LYSDRQSILIGQNLIRSIQINITRLAGTFGDVAVGLRISSDHKEQRIVTENAE RQLVVRDGATYKVDVVPIKNQVFLSLGSNFTLQLVTVMLVGGRFYGMPTILQE AKSAVLPVSEKAANSQVGFESTAFQLMNITAGTSHVMISRRGTYGALSVAWTT GYAPGLEIPEFIVVGNMTPTLGSLSFSHGEQRKGVFLWTFPSPGWPEAFVLHL SGVQSSAPGGAQLRSGFIVAEIEPMGVFQFSTSSSRNIIVSEDTQMIRLHVQRL FGFHSDLIKVSYQTTAGSAKPLEDFEPVQNGELFFQKFQTEVDFEITIINDQL SEIEEFFYINLTSVEIRGLQKFDVNWSPRLNLDFSVAVITILDNDDLAGMDIS FPETTVAVAVDTTLIPVETESTTYLSTSKTTTILQPTNVVAIVTEATGVSAIP EKLVTLHGTPAVSEKPDVATVTANVSIHGTFSLGPSIVYIEEEMKNGTFNTAE VLIRRTGGFTGNVSITVKTFGERCAQMEPNALPFRGIYGISNLTWAVEEEDFE EQTLTLIFLDGERERKVSVQILDDDEPEGQEFFYVFLTNPQGGAQIVEGKDDT GFAAFAMVIITGSDLHNGIIGFSEESQSGLELREGAVMRRLHLIVTRQPNRAF EDVKVFWRVTLNKTVVVLQKDGVNLMEELQSVSGTTTCTMGQTKCFISIELKP EKVPQVEVYFFVELYEATAGAAINNSARFAQIKILESDESQSLVYFSVGSRLA VAHKKATLISLQVARDSGTGLMMSVNFSTQELRSAETIGRTIISPAISGKDFV ITEGTLVFEPGQRSTVLDVILTPETGSLNSFPKRFQIVLFDPKGGARIDKVYG TANITLVSDADSQAIWGLADQLHQPVNDDILNRVLHTISMKVATENTDEQLSA MMHLIEKITTEGKIQAFSVASRTLFYEILCSLINPKRKDTRGFSHFAELTENF AFSLLTNVTCGSPGEKSKTILDSCPYLSILALHWYPQQINGHKFEGKEGDYIR IPERLLDVQDAEIMAGKSTCKLVQFTEYSSQQWFISGNNLPTLKNKVLSLSVK GQSSQLLTNDNEVLYRIYAAEPRIIPQTSLCLLWNQAAASWLSDSQFCKVIEE TADYVECACLHMSVYAVYARTDNLSSYNEAFFTSGFICISGLCLAVLSHIFCA RYSMFAAKLLTHMMAASLGTQILFLASAYASPQLAEESCSAMAAVTHYLYLCQ FSWMLIQSVNFWYVLVMNDEHTERRYLLFFLLSWGLPAFVVILLIVILKGIYH QSMSQIYGLIHGDLCFIPNVYAALFTAALVPLTCLVVVFVVFIHAYQVKPQWK AYDDVFRGRTNAAEIPLILYLFALISVTWLWGGLHMAYRHFWMLVLFVIFNSL QLL\YPLFYFLLL*DQSSSASPGGVDYILHGSTVTFQHGQNLSFINISIIDDN ESEFEEPIEILLTGATGGAVLGRHLVSRIIIAKSDSPFGVIRFLNQSKISIAN PNSTMILSLVLERTGGLLGEIQVNWETVGPNSQEALLPQNRDIADPVSGLFYF GEGEGGVRTIILTIYPHEEIEVEETFIIKLHLVKGEAKLDSRAKDVTLTIQEF GDPNGVVQFAPETLSKKTYSEPLALEGPLLITFFVRRVKGTFGEIMVYWELSS EFDITEDFLSTSGFFTIADGESEASFDVHLLPDEVPEIEEDYVIQLVSVEGGA ELDLEKSITWFSVYANDDPHGVFALYSDRQSILIGQNLIRSIQINITRLAGTF GDVAVGLRISSDHKEQPIVTENAERQLVVKDGATYKVDVVPIKNQVFLSLGSN FTLQLVTVMLVGGRFYGMPTILQEAKSAVLPVSEKAANSQVGFESTAFQLMNI TAGTSHVMISRRGTYGALSVAWTTGYAPGLEIPEFIVVGNMTPTLGSLSFSHG EQRKGVFLWTFPSPGWPEAFVLHLSGVQSSAPGGAQLRSGFIVAEIEPMGVFQ FSTSSSRNIIVSEDTQMIRLHVQRLFGFHSDLIKVSYQTTAGSAKPLEDFEPVQ NGELFFQKFQTEVDFEITIINDQLSEIEEFFYINLTSVEIRGLQKFDVNWSPR LNLDFSVAVITILDNDDLAGMDISFPETTVAVAVDTTLIPVETESTTYLSTSK TTTILQPTNVVAIVTEATGVSAIPEKLVTLHGTPAVSEKPDVATVTANVSIHG TFSLGPSIVYIEEEMKNGTFNTAEVLIRRTGGFTGNVSITVKTFGERCAQMEP NALPFRGIYGISNLTWAVEEEDFEEQTLTLIFLDGERERKVSVQILDDDEPEG QEFFYVFLTNPQGGAQIVEGKDDTGFAAFAMVIITGSDLHNGIIGFSEESQSG LELREGAVMRRLHLIVTRQPNRAFEDVKVFWRVTLNKTVVVLQKDGVNLMEEL QSVSGTTTCTMGQTKCFISIELKPEKVPQVEVYFFVELYEATAGAAINNSARF AQIKILESDESQSLVYFSVGSRLAVAHKKATLISLQVARDSGTGLMMSVNFST QELRSAETIGRTIISPAISGKDFVITEGTLVFEPGQRSTVLDVILTPETGSLN SFPKRFQIVLFDPKGGARIDKVYGTANITLVSDADSQAIWGLADQLHQPVNDD ILNRVLHTISMKVATENTDEQLSAMMHLIEKITTEGKIQAFSVASRTLFYEIL CSLINPKRKDTRGFSHFAELTENFAFSLLTNVTCGSPGEKSKTILDSCPYLSI LALHWYPQQINGHKFEGKEGDYIRIPERLLDVQDAEIMAGKSTCKLVQFTEYS SQQWFISGNNLPTLKNKVLSLSVKGQSSQLLTNDNEVLYRIYAAEPRIIPQTS LCLLWNQAAASWLSDSQFCKVIEETADYVECACLHMSVYAVYARTDNLSSYNE AFFTSGFICISGLCLAVLSHIFCARYSMFAAKLLTHMMAASLGTQILFLASAY ASPQLAEESCSAMAAVTHYLYLCQFSWMLIQSVNFWYVLVMNDEHTERRYLLP FLLSWGLPAFVVILLIVILKGIYHQSMSQIYGLIHGDLCFIPNVYAALFTAAL VPLTCLVVVFVVFIHAYQVKPQWKAYDDVFRGRTNAAEIPLILYLFALISVTW LWGGLHMAYRHFWMLVLFVIFNSLQLLVPSVLLFTSMRSTFPSFHTGTLTSRE KKSTFVLTCLLSPDSKGLGVLCFLNTEWAFQVH

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363	1102	2	2855	AAGATMERDGCAGGGSRGGEGGRAPREGPAGNGRDRGRSHAAE APGDPQAAASLLAPMDVGEEPLEKAARARTAKDPNTYKVLSLV LSVCVLTTILGCIFGLKPSCAKEVKSCKGRCFERTFG\NCRCD AACVELG\NCCLGLPGGTCI\EP\EHIW\TCNKFRCG\EKRLT RSLCACSDDCKD\RGDCLPSNLQFLCVQGE\KSWGRKNPCESH LMEP\QCP\AGFETPSLPLLIF/SLDGFRAEYLHTWGGLLPVI SKLKKCGTYTKNMRPVYPTKTFPNHYSIVTGLYPESHGIINNK MYDPKMNASFSLKSKEKFNPEWYKGEPIWVTAKYQGLKSGTFF WPGSDVEINGIFPDIYKMYNGSVPFEERILAVLQWLQLPKDER PHFYTLYLEEPDSSGHSYGPVSSEVIKALQRVDGMVGMLMDGL KELNLHRCLNLILISDHGMEQGSCKKYIYLNKYLGDVKNIKVI YGPAARLRPSDVPDKYYSFNYEGIARNLSCREPNQHFKPYLKH FLPKRLHFAKSDRIEPLTFYLDPQWQLALNPSERKYCGSGFHG SDNVFSNMQALFVGYGPGFKHGIEADTFENIEVYNLMCDLLNL TPAPNNGTHGSLNHLLKNPVYTPKHPKEVHPLVQCPFTRNPRD. NLGCSCNPSILPIEDFQTQFNLTVAEEKIIKHETLPYGRPRVL QKENTICLLSQHQFMSGYSQDILMPLWTSYTVDRNDSFSTEDF SNCLYQDFRIPLSPVHKCSFYKNNTKVSYGFLSPPQLNKNSSG IYSEALLTTNIVPMYQSFQVIWRYFHDTLLRKYAEERNGVNVV SGPVFDFDYDG\RCDSL\ENLRQKRRVHPVTQENFWIPNSTSF Y/VVLTSC\KDTSQTPLHC\ENL\DTLGFPFCLHRDWINSETC \VHG\KHDSSW\VEEFVKCLHRA\RITGC*GTSLGLSFYQQRK EPVSDILKLKTHLPTFSQED
364	1103	657	1	TVPPPPGGPSPAPLHPKRSPTSTGEAELKEERLPGRKASCSTA GSGSRGLPPL\SPMVSSAHNPNKAEIPERRKDSTSTPNNLPPS MMTRRNTYVCTERPGAERPSLLPNGKENSSGTPRVPPASPSSH SLAPPSGERSRLARGSTIRSTFHGGQVRDRRAGGWGWFFNKHA LQRAPRNAGAPSLMPGHRTVLINYGGGQDLKNWETCLAAPPNK HRR
365	1104	1	1313	HTLHHSSPTSEAEEFVSRLSTQNYFRSLPRGTSNMTYGTFNFL GGRLMIPNTGISLLIPPDAIPRGKIYEIYLTLHKPEDVRLPLA GCQTLLSPIVSCGPPG\VLLTRPVILG\MDHCG\EPSPDSW\S LRLKKQSCEGSWEDVLHLGEEAPSHLYYCQLEASACYVFTEQL SRYALVGEALSVAAAKRLKLLLFAPVACTSLEYNILVYCLHDT HDALNVVVQLEKQLQGQLIQEPLVLHFKDSYHNLRLSIHDVPS SLWKSKLLVSYQEIPFYHIWNGTQRYLHCTFTLERVSPSTSDL ACKLWVWQVEGDGQSFSINFNITKDTRFAELLALESEAGVPAL VGPSAFKIPFLIRQKIISSLDPPCRRGADWRTLAQKLHLDSHL SFFASKPSPTAMILNLWEARHFPNGNLSQLAAAVAGTGPAGRW LLSQCSEAEC
366	1105	1	343	GSAAGQVQQQQQRRHQQGKVTVKYDRKELRKRLVLEEWIVEQL GQLYGCEEEEMPEVEIDIDDLFDAYSDEQRASKLQEALVDCYK PTEEFIKELLSRIRGMRKLSP\PQKKSV

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367	1106	2	1398	IMLDGRVRWLTPVISALWEAEMEDVIARMQDEKNGIPIRTVKS FLSKIPSVFSGSDIVQWLIKNLTIEDPVEALHLGTLMAAHGYF FPISDHVLTLKDDGTFYRFQTPYFWPSNCWEPENTDYAVYLCK RTMQNKARLELADYEAESLARLQRAFARKWEFIFMQAEAQAKV DKKRDKIERKILDSQERAFWDVHRPVPGCVNTTEVDIKKSSRM RNPHKTRKSVYGLQNDIRSHSPTHTPTPETKPPTEDELQQQIK YWQIQLDRHRLKMSKVADSLLSYTEQYLEYDPFLLPPDPSNPW LSDDTTFWELEASKEPSQQRVKRWGFGMDEALKDPVGREQFLK FLESEFSSENLRFWLAVEDLKKRPIKEVPSRVQEIWQEFLAPG APSAINLDSKSYDKTTQNVKEPGRYTFEDAQEHIYKLMKSDSY PRFIRSSAYQELLQAKK\KGKSLTSKRLTSLAQSY
368	1107	1	461	GTRDYPRIVNHLDHTYVTAPQAFMMFQYFVKVVPTVYMKVDGE VLTTNQIYVTRHEKAAYVLMGDQGLPGVFILYELSPMMVNLTE IHTFFSLFLTIVGA\TIGGMFFEHFVINYLTHKWGLGFYFKNE NSLQGGHRTLYGVNFFMYWSLRGGS
369	1108	2	1522	SVWWNSQRQFVVRAWGCAGPCGRAVFLAFGLGLGLIEEKQAES RRAVSACQEIQAIFTQKSKPGPDPLDTRRLQGFRLEEYLIGQS IGKGCSAAVYEATMPTLPQNLEVTKSTGLLPGRGPGTSAPGEG QERAPGAPAFPLAIKMMWNISAGSSSEAILNTMSQELVPASRV ALAGEYGAVTYRKSKRGPKQLAPHPNIIRVLRAFTSSVPLLPG ALVDYPDVLPSRLHPEGLGHGRTLFLVMKNYPCTLRQYLCVNT PSPRLAAMMLLQLLEGVDHLVQQGIAHRDLKSDNILVELDPDG CPWLVIADFGCCLADESIGLQLPFSSWYVDRGGNGCLMAPEVS TARPGPRAVIDYSKADAWAVGAIAYEIFGLVNPFYGQGKAHLE SRSYQEAQLPALPESVPPDVRQLVRALLQREASKRPSARVAAN VLHLSLWGEHILALKNLKLDKMVGWLLQQSAATLLANRLTEKC CVETKMKMLFLANLECETLCQAALLLCSWRAAL
370	1109	105	1252	RPLLRLAELPDHCYRMNSSPAGTPSPQPSRANGNINLGPSANP NAQPTDFDFLKVIGKGNYGKVLLAKRKSDGAFYAVKVLQKKSI LKKKEQSHIMAERSVLLKNVRHPFLVGLRYSFQTPEKLYFVLD YVNGGELFFHLQRERRFLEPRARFYAAEVASAIGYLHSLNIIY RDLKPENILLDCQGHVVLTDFGLCKEGVEPEDTTSTFCGTPEY LAPEVL\RKEPYDRAVDWWCLGAVLYEMLHGLPPFYSQDVSQM YENILHQPLQIPGGRTVAACDLLQSLLHKDQRQRLGSKADFLE IKNHVFFSPINWDDLYHKRLTPPFNPNVTGPADLKHFDPEFTQ EAVSKSIGCTPDTVASSSGASSAFLGFSYAPEDDDILDC

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371	1110	3	1608	RPQTLKGHQEKIRQRQSILPPPQGPAPIPFQHRGGDSPEAKNR VGPQVPLSEPGFRRRESQEEPRAVLAQKIEKETQILNCALDDI EWFVARLQKAAEAFKQLNQRKKGKKKGKKAPAEGVLTLRARPP \SEGEFIDCFQKIKLAINLLAKLQKHIQNPSAAELVHFLFGPL DLIVNTCSGPDIARSVSCPLLSRDAVDFLRGHLVPKEMSLWES LGESWMRPRSEWPREPQVPLYVPKFHSGWEPPVDVLQEAPWEV EGLASAPIEEVSPVSRQSIRNSQKHSPTSEPTPPGDALPPVSS PHTHRGYQPTPAMAKYVKILYDFTARNANELSVLKDEVLEVLE DGRQWWKLRSRSGQAGYVPCNILGEARPEDAGAPFEQAGQKYW GPASPTHKLPPSFPGNKDELMQHMDEVNDELIRKISNIRAQPQ RHFRVERSQPVSQPLTYESGPDEVRAWLEAKAFSPRIVENLGI LTGPQLFSLNKEELKKVCGEEGVRVYSQLTMQKAFLEKQQSGS ELEELMNKFHSMNQRRGEDS
372	1111	3	1046	AWHEGLVSSPAIGAYLSASYGDSLVVLVATVVALLDICFILVA VPESLPEKMRPVSWGAQISWKQADPFASLKKVGKDSTVLL\IC ITVCLSYLPEAG\QYSSFF\LYLR\QVIGFG\SVKIAAFIAMV GILSIVAQTAFLSILMRSLGNKNTVLLGLGFQMLQLAWYGFGS QAWMMWAAGTVAAMSSITFPAISALVSRNAESDQQGVAQGIIT GIRGLCNGLGPALYGFIFYMFHVELTELGPKLNSNNVPLQGAV IPGPPFLFGACIVLMSFLAALFIPEYSKASGVQKHSNSSSGSL TNTPERGSDEDIEPLLQDSSIWELSSFEEPGNQCTEL*TRQKV GFCIRHL
373	1112	1	1950	MAAGLATWLPFARAAAVGWLPLAQQPLPPAPGVKASRGDEVLV VNVSGRRFETWKNTLDRYPDTLLGSSEKEFFYDADSGEYFFDR DPDMFRHVLNFYRTGRLHCPRQECIQAFDEELAFYGLVPELVG DCCLEEYRDRKKENAERLAEDEEAEQAGDGPALPAGSSLRQRL WRAFENPHTSTAALVFYYVTGFFIAVSVIANVVETIPCRGSAR RSSREQPCGERFPQAFFCMDTACVLIFTGEYLLRLFAAPSRCR FLRSVMSLIDVVAILPYYIGLLVPKNDDVSGAFVTLRVFRVFR IFKFSRHSQGLRILGYTLKSCASELGFLLFSLTMAIIIFATVM FYAEKGTNKTNFTSIPAAFWYTIVTMTTLGYGDMVPSTIAGKI FGSICSLSGVLVIALPVPVIVSNFSRIYHQNQRADKRRAQQKV RLARIRLAKSGTTNAFLQYKQNGGLEDSGSGEEQAVCVRNRSA FEQQHHHLLHCLEKTTCHEFTDELTFSEALGAVSPGGRTSRST SVSSQPVGPGSLLSSCCPRRAKRRAIRLANSTASVSRG\SMQE LDMLAGL\RRSHAP\QSRSSL\NAKPHDSLDLNCDSG\DFVAA IISIPTPPANTPDESQPSSPGGGGRAGSTLRNSSLGTPCLFPE TVKISSL
374	1113	4	664	GWGKPFKDWTTGGQDTGGEPALLVGAGEGRAPRLNCPSGQIRS PGPGDLSIYDNWIRYFNRSSPVYGLVP/RSKTSARIYPTYHTA FDTFDYVDKFLDPGEEGDKGHPETRTGEAED*ALALSPCRR\F SSHQAVARTAGSVILRLSDSFFLPLKVSDYSETLRSFLQAAQQ DLGALLEQHSISLGPLVTAVEKFEAEAAALGQRISTLQKGSPD PLQVRML

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375	1114	1	1147	GIRGGGSLASGGPGPGHASLSQRLRLYLADSWNQCDLVALTCF LLGVGCRLTPGLYHLGRTVLCIDFMVFTVRLLHIFTVNKQLGP KIVIVSKMMKDVFFFLFFLGVWLVAYGVATEGLLRPRDSDFPS ILRRVFYRPYLQIFGQIPQEDMDVALMEHSNCSSEPGFWAHPP GAQAGTCVSQYANWLVVLLLVIFLLVANILLVNLLIAMFSYTF GKVQGNSDLYWKAQRYRLIREFHSRPALAPPFIVISHLRLLLR QLCRRPRSPQPSSPALEHFRVYLSKEAERKLLTWESVHKENFL LARARDKRESDSERLKRTSQKVDLALKQLGHIREYEQRLKVLE REVQQCSRVLGWVAEALSRSALLPPGGPPPPDLPGSKD
376	1115	3	329	LIKLCKSKAKSCENDLEMGMLNSKFKKTRYQAGMRNSENLTAN NTLSKPTRY/QGELKEIKQDISSLRYELLEEKSQATGELADLI QQLSEKFGKNLNKDHLRVNKGKDI
377	1116	1	2043	LPLLHAGFNRRFMENSSIIACYNELIQIEHGEVRSQFKLRACN SVFTALDHCHEAIEITSDDHVIQYVNPAFERMMGYHKGELLGK ELADLPKSDKNRADLLDTINTCIKKGKEWQGVYYARRKSGDSI QQHVKITPVIGQGGKIRHFVSLKKLCCTTDNNKQIHKIHRDSG DNSQTEPHSFRYKNRRKESIDVKSISSRGSDAPSLQNRRYPSM ARIHSMTIEAPITKVINIINAAQENSPVTVAEALDRVLEILRT TELYSPQLGTKDEDPHTSDLVGGLMTDGLRRLSGNEYVFTKNV HQSHSHLAMPITINDVPPCISQLLDNEESWDFNIFELEAITHK RPLVYLGLKVFSRFGVCEFLNCSETTLRAWFQVIEANYHSSNA YHNSTHAADVLHATAFFLGKERVKGSLDQLDEVAALIAATVHD VDHPGRTNSFL\CNAGSELAVLYNDT\AV\LESHHTALAFQ\L TVKDTK\CNIFKNID/RGNHYRTLRQAIIDMVLATEMTKHFEH VNKFVNSINKPMAAEIEGSDCECNPAGKNFPENQILIKRMMIK CADVANPCRPLDLCIEWAGRISEEYFAQTDEEKRQGLPVVMPV FDRNTCSIPKSQISFIDYFITDMFDAWDAFAHLPALMQHLADN YKHWKTLDDLKCKSLRLPSDRLKPSHRGGLLTDKGHCESQ

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378	1117	1	3585	AFLSKVEEDDYPSEELLEDENAINAKRSKEKNPGNQGRQFDVN LQVPDRAVLGTIHPDPEIEESKQETSMILDSEKTSETAAKGVN TGGREPNTMVEKERPLADKKAQRPFERSDFSDSIKIQTPELGE VFQNKDSDYLKNDNPEEHLKTSGLAGEPEGELSKEDHENTEKY MGTESQGSAAAEPEDDSFHWTPHTSVEPGHSDKREDLLIISSF FKEQQSLQRFQKYFNVHELEALLQEMSSKLKSAQQESLPYNME KVLDKVFRASESQILSIAEKMLDTRVAENRDLGMNENNIFEEA AVLDDIQDLIYFVRYKHSTAEETATLVMAPPLEEGLGGAMEEM QPLHEDNFSREKTAELNVQVPEEPTHLDQRVIGDTHASEVSQK PNTEKDLDPGPVTTEDTPMDAIDANKQPETAAEEPASVTPLEN AILLIYSFMFYLTKSLVATLPDDVQPGPDFYGLPWKPVFITAF LGIASFAIFLWRTVLVVKDRVYQVTEQQISEKLKTIMKENTEL VQKLSNYEQKIKESKKHVQETRKQNMILSDEAIKYKDKIKTLE KNQEILDDTAKNLRVMLESEREQNVKNQDLISENKKSIEKLKD VISMNASEFSEVQIALNEAKLSEEKVKSECHRVQEENARLKKK KEQLQQEIEDWSKLHAELSEQIKSFEKSQKDLEVALTHKDDNI NALTNCITQLNLLECESESEGQNKGGNDSDELANGEVGGDRNE KMKNQIKQMMDVSRTQTAISVVEEDLKLLQLKL\RASVSTKC\ NLEDQVKKLEDDRNSLQAAKAGLEDECKTLRQKVEILNELYQQ KEMALQKKLSQEEYERQEREHRLSAADEKAVSAAEEVKTYKRR IEEMEDELQKTERSFKNQIATHEKKAHENWLKARAAERAIAEE KREAANLRHKLLDLTQKMAMLQEEPVIVKPMGKPNTQNPPRR GPLSQNGSFGPSPVSGGECSPPLTVEPPVRPLSATLNRRDMPR SEFGSLDGPLPHPRWSAEASGKPSPSDPGSGTATMMNSSSRGS SPTRVLDEGKVNMAPKGPPPFPGVPLMSTPMGGPVPPPIRYGP PPQLCGPFGPRPLPPPFGPGMRPPLGLREFAPGVPPGRRDLPL HPRGFLPGHAPFRPLGSLGPREYFIPGTRLPPPTHGPQEYPPP PAVRDLLPSGSRDEPPPASQSTSQDCSQALKQSP

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379	1118	3	2946	MAADSEPESEVFEITDFTTASEWERFISKVEEVLNDWKLIGNS LGKPLEKGIFTSGTWEEKSDEISFADFKFSVTHHYLVQESTDK EGKDELLEDVVPQSMQDLLGMNNDFPPRAHCLVRWYGLREFVV IAPAAHSDAVLSESKCNLLLSSVSIALGNTGCQVPLFVQIHHK WRRMYVGECQGPGVRTDFEMVHLRKVPNQYTHLSGLLDIFKSK IGCPLTPLPPVSIAIRFTYVLQDWQQYFWPQQPPDIDALVGGE VGGLEFGKLPFGACEDPISELHLATTW\PHLTEGIIVDNDVYS DLDPIQAPHWSVRVRKAENPQCLLGDFVTEFFKICRRKESTDE ILGRSAFEEEGKETADITHALSKLTEPASVPIHKLSVSNMVHT AKKKIRKHRGVEESPLNNDVLNTILLFLFPDAVSEKPLDGTTS TDNNNPPSESEDYNLYNQFKSAPSDSLTYKLALCLCMINFYHG GLKGVAHLWQEFVLEMRFRWENNFLIPGLASGPPDLRCCLLHQ KLQMLNCCIERKKARDEGKKTSASDVTNIYPGDAGKAGDQLVP DNLKETDKEKGEVGKSWDSWSDSEEEFFECLSDTEELKGNGQE SGKKGGPKEMANLRPEGRLYQHGKLTLLHNGEPLYIPVTQEPA PMTEDLLEEQSEVLAKLGTSAEGAHLRARMQSACLLSDMESFK AANPGCSLEDFVRWYSPRDYIEEEVIDEKGNVVLKGELSARMK IPSNMWVEAWETAKPIPARRQRRLFDDTREAEKVLHYLAIQKP ADLARHLLPCVIHAAVLKVKEEESLENISSVKKIIKQIISHSS KVLHFPNPEDKKLEEIIHQITNVEALIARARSLKAKFGTEKCE QEEEKEDLERFVSCLLEQPEVLVTGAGRGHAGRIIHKLFVNAQ RAAAMTPPEEEELKRMGSPEERRQNSVSDFPPPAGREFILRTTV PRPAPYSKALPQRMYSVLTKEDFRLAGAFSSDTSFF
380	1119	2333	670	SPTRTGDRSVSLIVFLTEGKPTVGETHTLKILNNTREAARGQV CIFTIGIGNDVDFRLLEKLSLENCGLTRRVHEEEDAGSQLIGF YDEIRTPLLSDIRIDYPPSSVVQATKTLFPNYFNGSEIIIAGK LVDRKLDHLHVEVTASNSKKFIILKTDVPVRPQKAGKDVTGSP RPGGDGEGDTNHIERLWSYLTTKELLSSWLQSDDEPEKERLRQ RAQALAVSYRFLTPFTSMKLRGPVPRMDGLEEAHGMSAAMGPE PVVQSVRGAGTQPGPLLKKPYQPRIKISKTSVDGDPHFVVDFP LSRLTVCFNIDGQPGDILRLVSDHRDSGVTVNGELIGAPAPPN GHKKQRTYLRTITILINKPERSYLEITPSRVILDGGDRLVLPC NQSVVVGSWGLEVSVSANANVTVTIQGSIAFVILIHLYKKPAP FQRHHLGFYIANSEGLSSNCHGLLGQFLNQDARLTEDPAGPSQ NLTHPLLLQVGEGPEAVLTVKGHQVPVVWKQRKIYNGEEQIDC WFARNNAAKLIDGEYKDYLASHPFDTGMTLGQGMSREL
381	1120	102	426	VPLESLSCSHADNWKQELTKFISPDQLPVEFGGTMTDPDGNPK CLTKINYGGEVPKSYYLCKQVRLQYEHTRSVGRGSSLQVENEI LFPGCVLRCPEVLQHLQPGSF

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382	1121	3	3726	PAAPEHTDPSEPRGSVSCCSLLRGLSSGWSSPLLPAPVCNPNK AIFTVDAKTTEILVANDKACGLLGYSSQDLIGQKLTQFFLRSD SDVVEALSEEHMEADGHAAVVFGTVVDIISRSGEKIPVSVWMK RMRQERRLCCVVVLEPVERVSTWVAFQSDGTVTSCDSLFAHLH GYVSGEDVAGQHITDLIPSVQLPPSGQHIPKNLKIQRSVGRAR DGTTFPLSLKLKSQPSSEEATTGEAAPVSGYRASVWVFCTISG LITLLPDGTIHGINHSFALTLFGYGKTELLGKNITFLIPGFYS YMDLAYNSSLQLPDLASCLDVGNESGCGERTLDPWQGQDPAEG GQDPRINVVLAGGHVVPRDEIRKLMESQDIFTGTQTELIAGGQ LLSCLSPQPAPGVDNVPEGSLPVHGEQALPKDQQITALGREEP VAIESPGQDLLGESRSEPVDVKPFASCEDSEAPVPAEDGGSDA GMCGLCQKAQLERMGVSGPSGSDLWAGAAVAKPQAKGQLAGGS LLMHCPCYGSEWGLWWRSQDLAPSPSGMAGLSFGTPTLDEPWL GVENDREELQTCLIKEQLSQLSLAGALDVPHAELVPTECQAVT APVSSCDLGGRDLCGGCTGSSSACYALATDLPGGLEAVEAQEV DVNSFSWNLKELFFSDQTDQTSSNCSCATSELRETPSSLAVGS DPDVGSLQEQGSCVLDDRELLLLTGTCVDLGQGRRFRESCVGH DPTEPLEVCLVSSEHYAASDRESPGHVPSTLDAGPEDTCPSAE EPRLNVQVTSTPVIVMRGAAGLQREIQEGAYSGSCYHRDGLRL SIQFEVRRVELQGPTPLFCCWLVKDLLHSQRDSAARTRLFLAS LPGSTHSTAAELTGPSLVEVLRARPWFEEPPKAVELEGLAACE GEYSQKYSTMSPLGSGAFGFVWTAVDKEKNKEVVVKFIKKEKV LEDCWIEDPKLGKVTLEIAILSRVEHANIIKVLDIFENQGFFQ LVMEKHGSGLDLFAFIDRHPRLDEPLASYIFRQVRAG\QSRLV SAVGYLRLKDIIHRDIKDENIVIAEDFTIKLIDFGSAAYLERG KLFYTFCGTIEYCAPEVLMGNPYRGPELEMWSLGVTLYTLVFE ENPFCELEETVEAAIHPPYLVSKELMSLVSGLLQPVPERRTTL EKLVTDPWVTQPVNLADYTWEEVFRVNKPESGVLSAASLEMGN RSLSDVAQAQELCGGPVPGEAPNGQGCLHPGDPRLLTS
383	1122	177	1365	PGTSAATCRFLSPPVISLSFTGLCISDLVVAVNGVWILVETFM LKGGNFFSKHVPWSYLVFLTIYGVELFLKVAGLGPVEYLSSGW NLFDFSVTVFAFLGLLALALNMEPFYFIVVLRPLQLLRLFKLK ERYRNVLDTMFELLPRMASLGLTLLIFYYSFAIVGMEFFCGIV FPNCCNTSTVADAYRWRNHTVGNRTVVEEGYYYLNNFDNILNS FVTLFELTVVNNWYIIMEGVTSQTSHWSRLYFMTFYIVTMVVM TIIVAFILEAFVFRMNYSRKNQDSEVDGGITLEKEISKEELVA VLELYREARGASSDVTRLLETLSQMERYQQHSMVFLGRRSRTK SDLSLKMYQEEIQEWYEEHAREQEQQRQLSSSAAPAAQQPPGS RQRSQTVT

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384	1123	1	986	LAGVGTQAPPRRPGGEMAAGQNGHEEWVGSAYLFVESSLDKVV LSDAYAHPQQKVAVYRALQAALAESGGSPDVLQMLKIHRSDPQ LIVQLRFCGRQPCGRFLRAYREGALRAALQRSLAAALAQHSVP LQL\DLRAGAERLEALLADEERCLSCILAQQPDRLRDEELAEL EDALRNLKCGSGARGGDGEVASAPLQPPVPSLSEVKPPPPPPP AQTFLFQGQPVVNRPLSLKDQQTFARSVGLKWRKVGRSLQRGC RALRDPALDSLAYEYEREGLYEQAFQLLRRFVQAEGRRATLQR LVEALEENELTSLAEDLLGLTDPNGGLA
385	1124	2409	399	SSKPKLKKRFSLRSVGRSVRGSVRGILQWRGTVDPPSSAGPLE TSSGPPVLGGNSNSNSSGGAGTVGRGLVSDGTSPGERWTHRFE RLRLSRGGGALKDGAGMVQREELLSFMGAEEAAPDPAGVGRGG GVAGPPSGGGGQPQWQKCRLLLRSEGEGGGGSRLEFFVPPKAS RPRLSIPCSSITDVRTTTALEMPDRENTFVVKVEGPSEYIMET VDAQHVKAWVSDIQECLSPGPCPATSPRPMTLPLAPGTSFLTR ENTDSLELSCLNHSESLPSQDLLLGPSESNDRLSQGAYGGLSD RPSASISPSSASIAASHFDSMELLPPELPPRIPIEEGPPAGTV HPLSAPYPPLDTPETATGSFLFQG\EPEGGEGDQPLSGYPWFH GMLSRLKAAQLVLTGGTGSHGVFLVRQSETRRGEYVLTFNFQG KAKHLRLSLNEEGQCRVQHLWFQSIFDMLEHFRVHPIPLESGG SSDVVLVSYVPSSQRQQGEQSRSAGEEVPVHPRSEAGSRLGAM RGCAREMDATPNASCTLMPFGASDC\EPTTSHDPPQPPEPPSW TDPPQPGEE\EASR\APGSGGGQQAAAAAKERQEKEKAGG\GGV PEE\LVPVV*LVPVGELGEGHRPQAQEAQGRLGPGGDAGVPP\ MVQLQQSPLGG\DGEEGGHPR\AI\NNQYSFV
386	1125	2204	1042	FRAPVGTAARSPQVVIRRLPPGLTKEQLEEQLRPLPAHDYFEF FAADLSLYPHLYSRAYINFRNPDDILLFRDRFDGYIFLDSKDP EYKKFLETYCVEEEKTSANPETLLGEMEAKTRELIARRTTPLL EYIKNRKLEKQRIREEKREERRRELEKKRLREEEKRRRREEE RCKKKETDKQKKIAEKEVRIKLLKKPEKGEEPTTEKPKERGEE IDTGGGKQESCAPGAVVKARPMEGSLEEPQETSHSGSDKEHRD VERSQEQESEAQRYHVDDGRRHRAHHEPERLSRRSEDEQRWGK GPGQDRGKKGSQDSGAPGEAMERLGRAQRCDDSPAPRKERLAN KDRPALQLYDPGARFRARECGGNRRICKAEGSGTGPEKREEAE
387	1126	176	800	GVWGVCVSGLLQVGSQRAQAWRAWSPMETPLTGTFLWPHIPQG LFFDDSYGFYPGQVLIGPAKIFSSVQWLSGVKPVLSTKSKFRV VVEEVQVVELKVTWITKSFCPGGTDSVSPP/PSVITQENLGRV KRLGCFDHAQR/HAWGALSVCLPSQGRASQDCLGMSRKKLRPG GGLYGQEGEAPVEEAGCADHVMLPRHPVFPGPFHGRPR

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388	1127	1	2017	FRDSSPCSAFEFHCLSGECIHSSWRCDGGPDCKDKSDEENCAV ATCRPDEFQCSDGNCIHGSRQCDREYDCKDMSDEVGCVNVTLC EGPNKFKCHSGECITLDKVCNMARDCRDWSDEPIKECGTNECL DNNGGCSHVCNDLKIGYECLCPDGFQLVAQRRCEDIDECQDPD TCSQLCVNLEGGYKCQCEEGFQLDPHTKACKAVGSIAYLFFTN RHEVRKMTLDRSEYTSLIPNLRNVVALDTEVASNRIYWSDLSQ RMICSTQLDRAHGVSSYDTVISRDIQAPDGLAVDWIHSNIYWT DSVLGTVSVADTKGVKRKTLFRENGSKPRAIVVDPVHGFMYWT DWGTPAKIKKGGLNGVDIYSLVTENIQWPNGITLDLLSGRLYW VDSKLHSISSIDVNGGNRKTILEDEKRLAHPFSLAVFEDKVFW TDIINEAIFSANRLTGSDVNLLAENLLSPEDMVLFHNLTQPRG VNWCERTTLSNGGCQYLCLPAPQINPHSPKFTCACPDGMLLAR DMRSCLTEG\EAAVATQETSTVRLKVSSTAVRTQHTTTRPVPD TSRLPGATPGLTTVEIVTMSHQALGDVAG\RGN\EKKPSSVRA LSIVLPIV\LLVFLCLGVFLLWKNWRLKNINSINFDNPVYQKT TEDEVHICHNQDGYSYPSRQMVSLEDDVA
389	1128	2299	1148	RIPGLGPPGSPPPPPHVRGMPGCPCPGCGMAGPRLLFLTALAL ELLGRAGGSQPALRSRGTATACRLDNKESESWGALLSGERLDT WICSLLGSLMVGLSGVFPLLVIPLEMGTMLRSEAGAWRLKQLL SFALGGLLGNVFLHLLPEAWAYTCSASPGGEGQSLQQQQQLGL WVIAGILTFLALEKMFLDSKEEGTSQAPNKDPTAAAAALNGGH CLAQPAAEPGLGAVVRSIKVSGYLNLLANTIDNFTHGLAVAAS FLVSKKIGLLTTMAILLHEIPHEVGDFAILLRAGFDRWSAAKL QLSTALGGLLGAGFAICTQSPKGVEETAAWVLPFTSGGFLYIA LVNVLPDLLEEEDPWRSLQQLLLLLCAGIVVMVLFSLFVD
390	1129	1	523	GKVSAGQAGADRTLRRAPEPRFSQEPTGNSAYPQLRPFLDPQG RDLKPSALVPPTRSHTGRRPWLHTQPLPGPQGRAWGPTC/TPA CVDRVLESEEGRREYLAFPTSKSSGQKGRKELLKGNGRRIDYM LHAEEGLCPDWKAEVEEFSFITQLSGLTDHLPVAMRLMVSSGE EEA
391	1130	1459	765	PCGGIRLSASEAATLFGYLVVPAGGGGTFLGGFFVNKLRLRGS AVIKFCLFCTVVSLLGILVFSLHCPSVPMAGVTASYGGSLLPE GHLNLTAPCNAACSCQPEHYSPVCGSDGLMYFSLCHAGCPAAT ETNVDGQKVSGAAAYRPCPPLDPGKGPPCLPLVIGAIVGLPRC TETVAVSLRIFPLVLAM\HCREMHFNLSEKAPPSGFHIRCNFL YIPQQHSCTNGNSTMCP
392	1131	1668	962	LLRKVGAPGGARGVIRLLDWFERPDGFLLVLERPEPA\QD\LF DFITERGALDEPLARRF\FAQVLAAVRHCHSCGVVHRDIKDEN LLVDLRSGELKLIDFGSGALLKDTVYTDFDGTRVYSPPEWIRY HRYHGRSATVWSLGVLLYDMVCGDIPFEQDEEILRGRLLFRRR VSPECQQLIRWCLSLRPSERPSLDQIAAHPWMLGADGGAPESC DLRLCTLDPDDVASTTSSSESL

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393	1132	3	817	GKNSQKASPVDDEQLSVCLSGFLDEVMKKYGSLVPLSEKEVLG RLKDVFNEDFSNRKPFINREITNYRARHQKCNFRIFYNKHMLD MDDLATLDGQNWLNDQVINMYGELIMDAVPDKVHFFNSFFHRQ LVTKGYNGVKRWTKKVDLFKKSLLLIPIHLEVHWSLITVTLSN RIISFYDSQGIHFKFCVENIRKYLLTEAREKNR\LNLQGWQTA VTKCIPQQKNDSDCGVFVLQYCKCLAL\KQPFQFSQEDMPRVR KRIYKELCECRLMD
394	1133	1252	628	PPGG*QGSAAKHR/FP/KGYRHPALEARLGRRRTVQEARALLR CRRAGISAPVVFFVDYASNCLYMEEIEGSVTVRDYIQSTMETE K\TPQGLSNLAKTIGQVLARMHDEDLIHGDLTTSNMLLKPPLE QLNIVLIDFGLSFISALPEDKGVDLYVLEKAFLSTHPNTETVF EAFLKSYSTSSKKARPVLKKLDEVRLRGKKRSMVG
395	1134	2	1595	RACVFRPEDMMQGEAHPSASLIDRTIKMRKETEARKVVLAWGL LNVSMAGMIYTEMTGKLISSYYNVTYWPLWYIELALASLFSLN ALFDFWRYFKYTVAPTSLVVSPGQQTLLGLKTAVVQTTPPHDL AATQIPPAPPSPSIQGQSVLSYSPSRSPSTSPKFTTSCMTGYS PQLQGLSSGGSGSYSPGVTYSPVSGYNKLASFSPSPPSPYPTT VGPVESSGLRSRYRSSPTVYNSPTDKEDYMTDLRTLDTFLRSE EEKQHRVKLGSPDSTSPSSSPTFWNYSRSMGDYAQTLKKFQYQ LACRSQAPCANKDEADLSSKQAAEEVWARVAMNRQLLDHMDSW TAKFRNWINETILVPLVQEIESVSTQMRRMGCPELQIGEASIT SLKQAALVKAPLIPTLNTIVQYLDLTPNQEYLFERIKELSQGG CMSSFRWNRGGDFKGRKWDTDLPTDSAIIMHVFCTYLDSRLPP HPKYPDGKTFTSQHFVQTPNKPDVTNENVFCIYQSAINPPHYE LIYQRHVYIPAKGQK
396	1135	16	1542	SSAVEFINRNNSVVQVLLAAGADPNLGDDFSSVYKTAKEQGIH SLEVLITREDDFNNRLNNRASFKGCTALHYAVLADDYRTVKEL LDGGANPLQRNEMGHTPLDYAREGEVMKLLRTSEAKYQEKQRK REAEERRRFPLEQRLKEHIIGQESAIATVGAAIRRKENGWYDE EHPLVFLFLGSSGIGKTELAKQTAKYMHKDAKKGFIRLDMSEF QERHEVAKFIGSPPGYVGHEEGGQLTKKLKQCPNAVVLFDEVD KAHPDVLTIMLQLFDEGRLTDGKGKTIDCKDAIFIMTSNVASD EIAQHALQLRQEALEMSRNRIAENLGDVQISDKITISKNFKEN VIRPILKAHFRRDEFLGRINEIVYFLPFCHSELIQLVNKELNF WAKRAKQRHNITLLWDREVADVLVDGYNVHYGARSIKHEVERR VGNQLAAAYEQDLLP\GGCTLRITVEDSDKQLLKSPELPSPQA EKRLPKLRLEIIDKDSKTRRLDIRAPLHPEKVCNTI
397	1136	1848	1602	SSCDRERHGSLGMMSGSFILCLALVTRWSPQASSVPLAVYESK TRKSYRSQRDRDGKDRSQGMGLSLLVETRKLLLSANQG

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398	1137	1497	717	HTPMA/FFL/SFLSTSET/VYTFVILPKMLINLLSVARTISFN CCALQMFFFLGFAITNCLLLGVMGYDRYAAICHPLHYPTLMSW QVCGKLAAACAIGGFLASLTVVNLVFSLPFCSTNKVNHYFCDI SAVILLACTNTDVNGFVIFICGVLVLVVPFLFICVSYFCILRT ILKIPSAEGRRKAFSTCASHLSVVIVHYGCASFIYLRPTANYV SNKDRLVTVTYTIVTPLLNPMVYSLRNKDVQLAIRKVLGKKGS LKLYN
399	1138	2	1185	RPPAATRYPREKLKSMTSRDNYKAGSREAA\AAAAAAVAAAAA AAAAAEPYPVSGAKRKYLEDSDPERSDYEEQQLQEEEEARKVK SGIRQMRLFSQDECAKIEARIDEVVSRAEKGLYNEHTVDRAPL RNKYFFGEGYTYGAQLQKRGPGQERLYPPGDVDEIPEWVHQLV IQKLVEHRVIPEGFVNSAVINDYQPGGCIVSHVDPIHIFERPI VSVSFFSDSALCFGCKFQFKPIRVSEPVLSLPVRRGSVTVLSG YAADEITHCIRPQDIKERRAVIILRKTRLDAPRLETKSLSSSV LPPSYASDRLSGNNRDPALKPKRSHRKADPDAAHRPRILEMDK EENRRSVLLPTHRRRGSFSSENYWRKSYESSEDCSEAAGSPAR KVKMRRH
400	1139	60	1699	VTWHFYFCSDHKNGHYIIPQMADRSRQKCMSQSLDLSELAKAA KKKLQALSNRLFEELAMDVYDEVDRRENDAVWLATQNHSTLVT ERSAVPFLPVNPEYSATRNQGRQKLARFNAREFATLIIDILSE AKRRQQGKSLSSPTDNLELSLRSQSDLDDQHDYDSVASDEDTD QEPLRSTGATRSNRARSMDSSDLSDGAVT\LQEYLELKKALAT SEAKVQQLMKVNSSLSDEL\RRLQREHFAPI\IHKLQAENLQL RQPPGPVPTPPLPSERAEHTPMAPGGSTHRRDRQAFSMYEPGS ALKPFGGPPGDELTTRLQPFHSTELEDDAIYSVHVPAGLYRIR KGVSASAVPFTPSSPLLSCSQEGSRHTSKLSRHGSGADSDYEN TQSGDPLLGLEGKRFLELGKEEDFHPELESLDGDLDPGLPSTE DVILKTEQVTKNIQELLRAAQEFKHDSFVPCSEKIHLAVTEMA SLFPKRPALEPVRSSLRLLNASAYRLQSECRKTVPPEPGAPVD FQLLTQQVIQCAYDIAKAAKQLVTITTREKKQ

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401	1140	1	1863	RYLSYGSGPKRFPLVDVLQYALEFASSKPVCTSPVDDIDASSP PSGSIPSQTLPSTTEQQGALSSELPSTSPSSVAAISSRSVIHK PFTQSRIPPDLPMHPAPRHITEEELSVLESCLHRWRTEIENDT RDLQESISRIHRTIELMYSDKSMIQVPYRLHAVLVHEGQANAG HYWAYIFDHRESRWMKYNDIAVTKSSWEELVRDSFGGYRNASA YCLMYINDKAQFLIQEEFN/K/ETGQPLVGIETLPPDLRDFVE EDNQRFEKELEEWDAQLAQKALQEKLLASQKLRESETSVTTAQ AAGDPKYLEQPSRSDFSKHLKEETIQIITKASHEHEDKSPETV LQSAIKLEYARLVKLAQEDTPPETDYRLHHVVVYFIQNQAPKK IIEKTLLEQFGDRNLSFDERCHNIMKVAQAKLEMIKPEEVNLE EYEEWHQDYRKFRETTMYLIIGLENFQRESYIDSLLFLICAYQ NNKELLSKGLYRGHDEELISHYRRECLLKLNEQAAELFESGED REVNNGLIIMNEFIVPFLPLLLVDEMEEKDILAVEDMRNRWCS YLGQEMEPHLQEKLTDFLPKLLDCSMEIKSFHEPPKLPSYSTH ELCERFARIMLSLSRTPADGR
402	1141	1	465	AQVYVRMDSFDEDLARPSGLLAQERKLCRDLVHSNKKEQEFRS IFQHIQSAQSQRSPSELFAQHM\VPIVHHVKEHHFGSSGMTLH ERFT\KYLKRG\TEQEAAKNKKSPEIHRRIDISPSTFRKHGLA HDEMKSPREPGYKDGHNSKNELQRVNFY
403	1142	2	369	TYTFCFSLMI\ILLTIIQGLILEAFGELRDQLDQVKEDMETKC FICGIGNDYFDTVPHGFETHTLQEHNLANYLFFLMYLINKDET EHTGQESYVWKMYQERCWEFFPAGDCFRKQYEDQLN
404	1143	3115	557	FRRKGGGGPKDFGAGLKYNSRHEKVNGLEEGVEFLPVNNVKKV EKHGPGRWVVLAAVLIGLLLVLLGIGFLVWHLQYRDVRVQKVF NGYMRITNENFVDAYENSNSTEFVSLASKVKDALKLLYSGVPF LGPYHKESAVTAFSEGSVIAYYWSEFSIPQHLVEEAERVMAEE RVVMLPPRARSLKSFVVTSVVAFPTDSKTVQRTQDNSCSFGLH ARGVELMRFTTPGFPDSPYPAHARCQWALRGDADSVLSLTFRS FDLASCDERGRHLV\TVYNT\LSPMEPHA\LVQLCGTYPPSYN LTFHS\S\QNVLLITLITNTERRHPG\FEATFFQLPRMSSCGG RLRKAQGTFNSPYYPGHYPPNIDCTWNIEVPNNQHVKVRFKFF YLLEPGVPAGTCPKDYVEINGEKYCGERSQFVVTSNSNKITVR FHSDQSYTDTGFLAEYLSYDSSDPCPGQFTCRTGRCIRKELRC DGWADCTDHSDELNCSCDAGHQFTCKNKFCKPLFWVCDSLNDC GDNSDEQGCSCP\AQTFRCSNGKCLSKSQQCNGKDDCGDGSDE ASCPKVNVVTCTKHTYRCLNGLCLSKGNPECDGKEDCSDGSDE KDCDCGLRSFTRQARVVGGTDADEGEWPWQVSLHALGQGHICG ASLISPNWLVSAAHCYIDDRGFRYSDPTQWTAFLGLHDQSQRS APGVQERRLKRIISHPFFNDFTFDYDIALLELEKPAEYSSMVR PICLPDASHVFPAGKAIWVTGWGHTQYGGTGALILQKGEIRVI NQTTCENLLPQQITPRMMCVGFLSGGVDSCQGDSGGPLSSVEA DGRIFQAGVVSWGDGCAQRNKPGVYTRLPLFRDWIKENTGV

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405	1144	1	424	RHEEDLGNLWENTRFTDCSFFVRGQEFKAHKSVLAARSPVFNA MFEHEMEESKKNRVEINDLDPEVFKEMMRFIYTGRAPNLDKMA DNLLAAADKYALERLKVMCEKALCSNLSVENVADTLVLADLHS \AEQLKAQAIDFINRCSVLRQLGCKDGKNWNSNQATDIMETSG GKSMIQSHPHLVAEAFRALASAQGPQFGIPRKRLKQS*NLGNL WENTRFTDCSFFVRGQEFKAHKSVLAARSPVFNAMFEHEMEES KKNRVEINDLDPEVFKEMMRFIYTGRAPNLDKMADNLLAAADK YALERLKVMCEKALCSNLSVENVADTLVLADLHSGRTVESTSH RLY
406	1145	1	1021	QRGGIPGKFQEDSGSVDWALGPFWGIFQADFGCMRFYLSAQTS DPVLRM*WGPSPISHPTSLCPGGGGAGQTTGSLCLGQQCCPLS CPNIPSRHKRWRL*AALVAGSRGSCTLRS*R*RTPLPVTRNLP R/CHLHLHPTGDLRVHVHQHCLLHGHVPPGAALLQCGGCDLRG EAAGLLFLGHACLRGSVNLRRDQWLPV\PYSRLCFSGAREGHL PSLLAMIHVRHCTPIPALLVC\PIKVNLLIPVAYLVFWAFLLV FSFISEHMVCGVGVIIILTGVPIFFLGVFWRSKPKCVHRLTES MTHWGQELCFVVYPQDAPEEEENGPCPPSLLPATDKPSKPQ
407	1146	2	1280	AAALVAEYLALLEDHRHLPVGCVSFQNISSNVLEESAISDDIL SPDEEGFCSGKHFTELGLVGLLEQAAGYFTMGGLYEAVNEVYK NLIPILEAHRDYKKLAAVHGKLQEAFTKIMHQSSGWERVFGTY FRVGFYGAHFGDLDEQEFVYKEPSITKLAEISHRLEEFYTERF GDDVVEIIKDSNPVDKSKLDSQKAYIQITYVEPYFDTYELKDR VTYFDRNYGLRTFLFCTPFTPDGRAHGELPEQHKRKTLLSTDH AFPYIKTRIRVCHREETVLTP\VEVAIEDMQKKTRELAFATEQ DPPDAKMLQMVLQGSVGPTVNQGPLEVAQVFLAEIPEDPKLFR HHNKLRLCFKDF*KKCEDALRKNKALIGPDQKEYHRELERNY CRLREALQPLLTQRLPQLMAPTPPGLRNSLNRASFRKADL
408	1147	55	651	GEGQQWQSTPLSPLQPTVADFLNLAWWTSAAAW*VLSGRWVEK VLPGREGSEEK*GMASSSADHLHSAPRALQ\SLFQQLLYGLIY HSWFQAGR*GFGGASSSPGPQSELRRLHGEGGVYD*GRPETLP GSVGGAEALWALADPAEAEGSPETRESSCVMKQTQYYFGSVNA SYNAIIDCGNCSRCWQWGGTRGQGRNL
409	1148	1855	904	VAGIPACFDN/FTEALAETACRQMGYSSKPTFRAVEIGPDQDL DVVEITENSQELRMRNSSGPCLSGSLVSLHCLACGESLKTPRV VGGEEASVDSWPWQVSIQYDKQHVCGGSILDPHWVLTAAHCFR KHTDVFNWKVRAGSDKLGSFPSLAVAKIIIIEFNPMYPKDNDI ALMKLQFPLTFSGTVRPICLPFFDEELTPATPLWIIGWGFTKQ NGGKMSDILLQASVQVIDSTRCNADDAYQGEVTEKMMCAGIPE GGVDTCQGDSGGPLMYQSDQWHVVGIVSWGYGCGGPSTPGVYT KVSAYLNWIYNVWKAEL

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410	1149	3	964	TISTVRWNSRIGMVLGVAIQKRAV\PGLY\AFEEAYARADKEA PRPCHKGSWCSSNQLCRECQAFMAHTMPKLKAFSMSSAYNAYR AVYAVAHGLHQLLGCASGACSRGRVYPWQLLEQIHKVHFLLHK DTVAFNDNRDPLSSYNIIAWDWNGPKWTFTVLGSSTWSPVQLN INETKIQWHGKDNQVPKSVCSSDCLEGHQRVVTGFHHCCFECV PCGAGTFLNKS/SYLGKDLPENYNEAKCVTFSLLFNFVSWIAF FTTASVYDGKYLPAANMMAGLSSLSSGFGGYFLPKCYVILCRP DLNSTEHFQASIQDYTRRCGST
411	1150	2	1378	VARGAFHPKMGPSFPSPKPGSERLSFVSAKQSTGQDTEAELQD ATLALHGLTVEDEGNYTCEFATFPKGSVRGMTWLRVIAKPKNQ AEAQKVTFSQDPTTVALCISKEGRPPARISWLSSLDWEAKETQ VSGTLAGTVTVTSRFTLVPSGRADGVTVTCKVEHESFEEPALI PVTLSVRYPPEVSISGYDDNWYLGRTDATLSCDVRSNPEPTGY DWSTTSGTFPTSAVAQGSQLVIHAVDSLFNTTFVCTVTNAVGM GRAEQVIFVRETPNTAGAGATGGIIGGIIAAIIATADA\TGIL ICRQQRKEQTLQGAEEDEDLEGPPSYKPPTPKAKLEAQEMPSQ LFTLGASEHSPLKTPYFDAGASCTEQEMPRYHELPTLEERSGP LHPGATSLGSPIPVPPGPPAVEDVSLDLEDEEGEEEEEYLDKI NPIYDALSYSSPSDSYQGKGFVMSRAMYV
412	1151	1	1828	GTRLREDKNHNMYVAGCTEVEVKSTEEAFEVFWRGQKKRRIAN THLNRESSRSHSVFNIKLVQAPLDADGDNVLQEKEQITISQLS LVDLAGSERTNRTRAEGNRLREAGNINQSLMTLRTCMDVLREN QMYGTNKMVPYRDSKLTHLFKNYFDGEGKVRMIVCVNPKAEDY EENLQVMRFAEVTQEVEVARPVDKAICGLTPGRRYRNQPRGP\ IGNEPLVTDVVLQSFPPLPSCEILDINDEQTLPRLIEALEKRH NLRQMMIDEFNKQSNAFKALLQEFDNAVLSKENHMQGKLNEKE KMISGQKLEIERLEKKNKTLEYKIEILEKTTTIYEEDKRNLQQ ELETQNQKLQRQFSDKRRLEARLQGMVTETTMKWEKECERRVA AKQLEMQNKLWVKDEKLKQLKAIVTEPKTEKPERPSRERDREK VTQRSVSPSPVPLLFQPDQNAPPIRLRHRRSRSAGDRWVDHKP ASNMQTETVMQPHVPHAITVSVANEKALAKCEKYMLTHQELAS DGEIETKLIKGDIYKTRGGGQSVQFTDIETLKQESPNGSRKRR SSTVAPAQPDGAESEWTDVETRCSVAVEMRAGSQLGPGYQHHA QPKRKKP
413	1152	1	336	PFSSSSVSSKGSDPFGTLDPFGSGSFNSAEGFADFSQMS/KGK STPVSQLGSADFPEAPDPFQPLGADSGDPFQSKKGFGDPFSGK DPFVPSSAAKPSKASASGFADFTSVS

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414	1153	1	1334	MSLMVVSMACVGLFLVQRAGPHMGGQDKPFLSAWPSAVVPRGG HVTLRCHYRHRFNNFMLYKEDRIHIPIFHGRIFQESFNMSPVT TAHAGNYTCRGSHPHSPTGWSAPSNPVVIMVTGNHRKPSLLAH PGPLVKSGERVILQCWSDIMFEHFFLHKEGISKDPSRLVGQIH DGVSKANFSIGPMMQDLAGTYRCYGSVTHSPYQLSAPSDPLDI VITGLYEKPSLSAQPGPTVLAGESVTLSCSSRSSYDMYHLSRE GEAHERRFSAGPKVNGTFQADFPLGPATHGGTYRCFGSFRDSP YEWSNSSDPLLVSVTGNPSNSWPSPTEPSSETGNPRHLHVLIG TSVVIILFILLLFFLLHRWCSN\KKNAAVMDQESAGNRTANSE DSDEQDPQEVTYTQLNHCVFTQRKITRPSQRPKTPPTDIIVYT ELPNAESRSKVVSCP
415	1154	1	1570	MSLRVHTLPTLLGAVVRPGCRELLCLLMITVTVGPGASGVCPT ACICATDIVSCTNKNLSKVPGNLFRLIKRLDLSYNRIGLLDSE WIPVSFAKLNTLILRHNNITSISTGSFSTTPNLKCLDLSSNKL KT\VKNAVFQELKVLEVLLLYNNHISYLDPSAFGGLSQLQKLY LSGNFLTQFPMDLYVGRFKLAELMFLDVSYNRIPSMPMHHINL VPGKQLRGIYLHGNPFVCD\CSLVSLLVFWYRRHFSSVMDFKN DYTCRLWSDSRHSRQVLLLQDSFMNCSDSIINGSFRALGFIHE AQVGERLMVHCDSKTGNANTDFIWVGPDNRLLEPDKEMENFYV FHNGSLVIESPRFEDAGVYSCIAMNKQRLLNETVDVTINVSNF TVSRSHAHEAFNTAFTTLAACVASIVLVLLYLYLTPCPCKCKT KRQKNMLHQSNAHSSILSPGPASDASADERKAGAGKRVVFLEP LKDTAAGQNGKVRLFPSEAVIAEGILKSTRGKSDSDSVNSVFS DTPFVAST
416	1155	2	1928	ASDFIRSLDHCGYLSLEGVFSHKFDFELQDVSSVNEDVLLTTG LLCKYTAQRFKPKYKFFHKSFQEYTAGRRLSSLLTSHEPEEVT KGNGYLQKMVSISDITSTYSSLLRYTCGSSVEATRAVMKHLAA VYQHGCLLGLSIAKRPLWRQESLQSVKNTTEQEILKAININSF VECGIHLYQESTSKSALSQEFEAFFQGKSLYINSGNIPDYLFD FFEHLPNCASALDFIKLGFYGGAMASWEKAAEDTGGIHMEEAP ETYIPSRAVSLFFNWKQEFRTLEVTLRDFSKLNKQDIRYLGKI FSSATSLRLQIKRCAGVAGSLSLVLSTCKNIYSLMVEASPLTI EDERHITSVTNLKTLSIHDLQNQRLPGGLTDSLGNLKNLTKLI MDNIKMNEEDAIKLAEGLKNLKKMCLFHLTHLSDIGEGMDYIV KSLSSEPCDLEEIQLVSCCLSANAVKILAQNLHNLVKLSILDL SENYLEKDGNEALHELIDRMNVLEQLTALMLPWGCDVQGSLSS LLKHLEEVPQLVKLGLKNWRLTDTEIRILGAFFGKNPLKNFQQ LNLAGNRVSSDGWLAFMGVFENLKQLVFFDFSTKEFLPDPALV RKLSQVLSKLTFLQEARLVGWQFDDDDLSVITGAFKLVTA
417	1156	342	718	ASDRKVAMTCDCFWFRTMLDQHASCMEVGTERERQAG\GLVMF DPSGFPTGEKVLQDDEFTCDLFRFLQLLCEGHNSGL*VPGTSD DTKA*IMFSSQ**QEPVSSNYASF*RQQIILEHGSALGSG

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418	1157	1	135	EITHIVGETAAFLCPRLRLRRGGKDGSPKPGFLASVIPVDRRP GE*DITHIVGETAAFLCPRLRLRRGGKDGSPKPGFLASVIPVD RRPGE \
419	1158	173	943	SKFIFYVDSQSMIFFFQTPTRHKVLIMEFCPCGSLYTVLEEPS NAYGLPESEFLIVLRDVVGGMNHLRENGIVHRDIKPGNIMRVI GEDGQSVYKLTDFGAARELEDDEQFVSLYGTEEYLHPDMYERA VLRKDHQ\KKYGAT\VDLW\SIGVTFYQGKPTGS\LAI*HPFE GASVRNKASDGIKIITGKGLLGAIS\GVQKSKKNG\PI\DWEW EDMPVSCSPSSGVLRVPNLPPVLA\NILESRSRKKCWGF*PSF LQEN
420	1159	987	500	GSTISCERSLRSLWTAHWALPEMDSRIPYDDYPVVFLPAYENP PAWIPPHERVHHPDYNNELTQFLPRTITLKKPPGAQLGFNIRG GKASQLGIFISKVIPDSDAHRAGLQEGDQVLAVNDVDFQDIEH SKAVEILKTAREISMRVRFFPYNYHRQKERTVH
421	1160	3	890	HEQVSALHRRIKAIVEVAAMCGVNIICFQEAWTMPFAFCTREK LPWTEFAESAEDGPTTRFCQKLAKNHDMVVVSPILERDSEHGD VLWNTAVVISNSGAVLGKTRKNHIPRVGDFNESTYYMEGNLGH PVFQTQFGRIAVNICYGRHHPLNWLMYSINGAEIIFNPSATIG ALSESLWPIEARNAAIANHCFTCAINRVGTEHFPNEFTSGDGK KAHQDFGYFYGSSYVAAPDSSRTPGLSRSRDGLLVAKLDLNLC QQVNDVWNFKMTGRYEMYARELAEAVKSNYSPTIVKE

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422	1161	5214	352	MAKSGGCGAGAGVGGGNGALTWVNNAAKKEESETANKNDSSKK LSVERVYQKKTQLEHILLRPDTYIGSVEPLTQFMWVYDEDVGM NCREVTFVPGLYKIFDEILVNAADNKQRDKNMTCIKVSIDPES NIISIWNNGKGIPVVEHKVEKVYVPALIFGQLLTSSNYDDDEK KVTGGRNGYGAKLCNIFSTKFTVETACKEYKHSFKQTWMNNMM KTSEAKIKHFDGEDYTCITFQPDLSKFKMEKLDKDIVALMTRR AYDLAGSCRGVKVMFNGKKLPVNGFRSYVDLYVKDKLDETGVA LKVIHELANERWDVCLTLSEKGFQQISFVNSIATTKGGRHVDY VVDQVVGKLIEVVKKKNKAGVSVKPFQVKNHIWVFINCLIENP TFDSQTKENMTLQPKSFGSKCQLSEKFFKAASNCGIVESILNW VKFKAQTQLNKKCSSVKYSKIKGIPKLDDANDAGGKHSLECTL ILTEGDSAKSLAVSGLGVIGRDRYGVFPLRGKILNVREASHKQ IMENAEINNIIKIVGLQYKKSYDDAQSLKTLRYGKIMIMTDQD QDGSHIKGLLINFIHHNWPSLLKHGFLEEFITPIVKASKNKQE LSFYSIPEFDEWKKHIENQKAWKIKYYKGLGTSTAKEAKEYFA DMERHRILFRYAGPEDDAAITLAFSKKKIDDRKEWLTNFMEDR RQRRLHGLPEQFLYGTATKHLTYNDFINKELILFSNSDNERSI PSLVDGFKPGQRKVLFTCFKRNDKREVKVAQLAGSVAEMSAYH HGEQALMMTIVNLAQNFVGSNNINLLQPIGQFGTRLHGGKDAA SPRYIFTMLSTLARLLFPAVDDNLLKFLYDDNQRVEPEWYIPI IPMVLINGAEGIGTGWACKLPNYDAREIVNNVRRMLDGLDPHP MLPNYKNFKGTIQELGQNQYAVSGEIFVVDRNTVEITELPVRT WTQVYKEQVLEPMLNGTDKTPALISDYKEYHTDTTVKFVVKMT EEKLAQAEAAGLHKVFKLQTTLTCNSMVLFDHMGCLKKYETVQ DILKEFFDLRLSYYGLRKEWLVGMLGAEFTKLNNQARFILEKI QGKITI*NRSKKDLIQMLVQRGYESDPVKAWKEAQEKAAEEDE TQNQHDDSSSDSGTPSGPDFNYILNMSLWSLTKEKVEELIKQR DAKGREVNDLKRKSPSDLWKEDLAAFVEELDKVESQEREDVLA GMSGKAIKGKVGKPKVKKLQLEETMPSPYGRRIIPEITAMKAD ASKKLLKKKKGDLDTAAVKVEFDEEFSGAPVEGAGEEALTPSV PINKGPKPKREKKEPGTRVRKTPTSSGKPSAKKVKKRNPWSDD ESKSESDLEETEPVVIPRDSLLRRAAAERPKYTFDFSEEEDDD ADDDDDDNNDLEELKVKASPITNDGEDEFVPSDGLDKDEYTFS PGKSKATPEKSLHDKKSQDFGNLFSFPSYSQKSEDDSAKFDSN EEDSASVFSPSFGLKQTDKVPSKTVAAKKGKPSSDTVPKPKRA PKQKKVVEAVNSDSDSEFGIPKKTTTPKGKGRGAKKRKASGSE NEGDYNPGRKTSKTTSKKPKKTSFDQDSDVDIFPSDFPTEPPS LPRTGRARKEVKYFAESDEEEDDVDFAMFN
423	1162	1	219	KGCLAASFNCIFLYTGELYPTMIR*VEA*WENDSLFLGKDILL CTGQTPELNQVHPSPKAPPNTHHCKAHSSH

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424	1163	1454	446	ENSFECKDCGKAFSRGYQLSHHQKIHTGEKPYECKECKKAFRW GNQLTQHQKIHTGEKPYECKDCGKAFRWGSSLVIHKRIHTGEK PYECKDCGKAFRRGDELTQHQRFHTGEKDYECKDCGKTFSRVY KLIQHKRIHSGEKPYECKDCGKAFICGSSLIQHKRIHTGEKPY ECQECGKAFTRVNYLTQHQKIHTGEKPHECKECGKAFRWGSSL VKHERIHTGEKPYKCTECGKAFNCGYHLTQHERIHTGETPYKC KECGKAFIYGSSLVKHERIHTGVKPYGCTECGKSFSHGHQLTQ HQKTHSGAKSYECKECGKACNHLNHLREHQRIHNS
425	1164	826	407	HQYLDDLYPLHVMTILLKSHFFTMLKRPVGSSSFASLPFYHQS ILLRKNQMKRKKTQQDLTHINWTLQAVSIQTCIWLQKKPSSYF HQLPNQVL*PENSGPESCLYDLAAVVVHHGSG
426	1165	464	29	XLDPDTLPAVATLLMDVMFYSNGVKDPMATGDDCGHIRFFSFS LIEGYISLVMDVQTQQRFPSNLLFTSASGELWKMVRIGGQPLG FGPVWESGPTGPTSPLILPVTPSSSHRQAASQVTTTKQGQWLC LKRPSARSPDHTACLG*
427	1166	649	901	EAPLTSVCFSLERRFGSSSNTTSFGTLASQNAPTFGSLSQQTS GFGTQSSGFSGFGSGTGGFSFGSNNS*VSPFLSLTLIKSIK
428	1167	3	340	EEPQGSPIWVWLAGSLTSVSCFLPFQRMRIKPHQGQYIGEMSF LQHHKGECRPQKD*ARQENPCGPCSERRKHLLGQDPKTCKCSC KNTDSRCKARPLELNERTCRCDKPRR
429	1168	355	1312	TLWAGPGLCPQSHSSSSVPAPWEPHVERALRTDRNQGQRPLLS ASWAPAPARPLFLTSPVLLPKSRAIPAARDPS*AGIFCLLEMA GGQASVVIIGSAGVLGCRWGSSGKSHSLSPSRKGNLHLLSQEP QTTVVHNATDGIKGSTESCNTTTEDEDLKVRKQEIIKITEQLI EAINNGDFEAYTKICDPGLTSFEPEALGNLVEGMDFHKFYFEN REWVRAADILLPAPLPLCLCLLLTFSSQLPTFPLFDLRAALLL CMLVPLCPDGCRQAPLKALLLSSKCHSFCSCFVAVPVTTIKLT YFLPGAVAYACNPNTLGG
430	1169	439	728	ERAGAGGAAACRAGTRSGATSRTPWPLHRQLSMMLMLAQSNPQ LFALMGTRAGIARELERVEQQSRLEQLSAAELQSRNQGHWADW LQAYRARLGQ
431	1170	3	440	NGTLFIMVMHIKDLVSDYKE*WL*RKPLPW*EALLLRDCFFF* VTENGADPNPYVKTYLLPDNHKTSKRKTKISRKTRNPTFNEML VYSGYSKETLRQRELQLSVLSAESLRENFFLGGVTLPLKDFNL SKETVKWYQLTAATYL

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432	1171	433	1824	LHRIMQLAVVVSQVLENGSSVLVCLEEGWDITAQVTSLVQLLS DPFYRTLEGFQMLVEKEWLSFGHKFSQRSSLTLNCQGSGFAPV FLQFLDCVHQVHNQYPTEFEFNLYYLKFLAFHYVSNRFKTFLL DSDYERLEHGTLFDDKGEKHAKKGVCIWECIDRMHKRSPIFFN YLYSPLEIEALKPNVNVSSLKKWDYYIEETLSTGPSYDWMMLT PKHFPSEDSDLAGEAGPRSQRRTVWPCYDDVSCTQPDALTSLF SEIEKLEHKLNQAPEKWQQLWERVTVDLKEEPRTDRSQRHLSR SPGIVSTNLPSYQKRSLLHLPDSSMGEEQNSSISPSNGVERRA ATLYSQYTSKNDENRSFEGTLYKRGALLKGWKPRWFVLDVTKH QLRYYDSGEDTSCKGHIDLAEVEMVIPAGPSMGAPKHTSDKAF FDLKTSKRVYNFCAQDGQSAQQWMDKIQSCISDA
433	1172	1714	946	EVEGPRRVSPAPETLGMEESVVRPSVFVVDGQTDIPFTRLGRS HRRQSCSVARVGLGLLLLLMGAGLAVQGWFLLQLHWRLGEMVT RLPDGPAGSWEQLIQERRSHEVNPAAHLTGANSSLTGSGGPLL WETQLGLAFLRGLSYHDGALVVTKAGYYYIYSKVQLGGVGCPL GLASTITHGLYKRTPRYPEELELLVSQQSPCGRATSSSRVWWD SSFLGGVVHLEAGEEVVVRVLDERLVRLRDGTRSYFGAFMV
434	1173	16	367	QSAELGPRRREGSRRPSCTKASKPWRRRPGGPTSGLG*GPLSP GPYQCRPSLPAQLYPQSLMAAATLRTPTQVSAASSRPHTPSPT HVLKPSVRGACSSPRCPGSGTLRRSWVGPFF
435	1174	27	1139	LWWPPLSRHAAHRQWPGPTAPRGLGHKVKGRGASPAAMWSCSW FNGTGLVEELPACQDLQLGLSLLSLLGLVVGVPVGLCYNALLV LANLHSKASMTMPDVYFVNMAVAGLVLSALAPVHLLGPPSSRW ALWSVGGEVHVALQIPFNVSSLVAMYSTALLSLDHYIERALPR TYMASVYNTRHVCGFVWGGALLTSFSSLLFYICSHVSTRALEC AKMQNAEAADATLVFIGYVVPALATLYALVLLSRVRREDTPLD RDTGRLEPSAHRLLVATVCTQFGLWTPHYLILLGHTVIISRGK PVDAHYLGLLHFVKDFSKLLAFSSSFVTPLLYRYMNQSFPSKL QRLMKKLPCGDRHCSPDHMGVQQVLA
436	1175	322	756	SESELFTLMPSLPTTNCVHSLQMIPPLSPAPNQELVLGLCYMS YLAFLYMTFDFCCLYFSTVYAPSFKYICVHTDTHICVCVCIYL SSVVSKSSAEADGVLQPRRHPASLLIVFATSISESSLLIFSFQ KTEAKLIVFAVSLAAK
437	1176	2	153	FFFLRQSLTLSPRLECSGATSASPSAGITGMSHHSQPIVNFLR ACIPISK
438	1177	1	692	RQHAEERGRRNPKTGLTLERVGPESSPYLLRRHQRQGQEGEHY HSCVQLAPTRGLEES/GHGPL/SLAGGPRVGGV/AAAATEAPR MEWKVKVRSDGTRYVAKRPVRDRLLKARALKIREERSGMTTDD DAVSEMKMGRYWSKEERKQHLIRAREQRKRREFMMQSRLECLR EQQNGDSKPELNIIALSHRKTMKKRNKKILDNWITIQEMLAHG ARSADGKRVYNPLLSVTTV

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439	1178	2	616	SDRGCSAAAGRNMTAVGVQAQRPLGQRQPRRSFFESFIRTLII TCVALAVVLSSVSICDGHWLLAEDRLFGLWHFCTTTNQSVPIC FRDLGQAHVPGLAVGMGLVRSVGALAVVAAIFGLEFLMVSQLC EDKHSQCKWVMGSILLLVSFVLSSGGLLGFVILLRNQVTLIGF TLMFWCEFTASFLLFLNAISGLHINSITHPWE
440	1179	2	540	QILPNLYLGSARDSANLESLAKLGIRYILNVTPNLPNFFEKNG DFHYKQIPISDHWSQNLSRFFPEAIEFIDEALSQNCGVLVHCL AGVSRSVTVTVAYLMQKLHLSLNDAYDLVKRKKSNISPNFNFM GQLLDFERSLRLEERHSQEQGSGGQASAASNPPSFFTTPTSDG AFELAPT ·
441	1180	940	463	RKSLHENKLKRLQEKVEVLEAKKEELETENQVLNRQNVPFEDY TRLQKRLKDIQRRHNEFRSLILVPNMPPTASINPVSFQSSAMG SKHGTTISSSYAGGTTSKGTLSTSQKTRRTGNNTKKTTRGTWI FRRMMFLENRQIKRGEVGDSVKLDILTCGI
442	1181	1	986	GRPGAGASELFPSVTTDLSVSKQNACLTCVDFVTVHVCMGFWG IGPGALSTSCIPYPLSHGPGSVKAEMLHMYSQKDPLILCVRLA VLLAVTLTVPVVLFPIRRALQQLLFPGKAFSWPRHVAIALILL VLVNVLVICVPTIRDIFGVIGSTSAPSLIFILPSIFYLRIVPS EVEPFLSWPKIQALCFGVLGVLFMAVSLGFMFANWATGQSRMS GH*SGPAGPGPCAHAHGGVRAAP*GPSCPTCGGGWFP*TWLSE AGDSRGCRLAHFPPPQGCQAWIMALIPTPTPWEEEEEEEEEEE EEEEEEEEEARSWWSLCPAQSSLPPPG
443	1182	460	27	INELRYHLEESRDKNVLLCLEERDWDPGLAIIDNLMQSINQSK KTVFVLTKKYAKSWNFKTAFYLALQRLMDENMDVIIFILLEPV LQHSQYLRLRQRICKSSILQWPDNPKAEGLFWQTLRNVVLTEN DSRYNNMYVDSIKQY
444	1183	1682	230	DDPIKTSWTPPRYVLSMSEERHERVRKKYHILVEGDGIPPPIK SFKEMKFPAAILRGLKKKGIHHPTPIQIQGIPTILSGRDMIGI AFTGSGKTLVFTLPVIMFCLEQEKRLPFSKREGPYGLIICPSR ELARQTHGILEYYCRLLQEDSSPLLRCALCIGGMSVKEQMETI RHGVHMMVATPGRLMDLLQKKMVSLDICRYLALDEADRMIDMG FEGDIRTIFSYFKGQRQTLLFSATMPKKIQNFAKSALVKPVTI NVGRAGAASLDVIQEVEYVKEEAKMVYLLECLQKTPPPVLIFA EKKADVDAIHEYLLLKGVEAVAIHGGKDQEERTKAIEAFREGK KDVLVATDVASKGLDFPAIQHVINYDMPEEIENYVHRIGRTGR SGNTGIATTFINKACDESVLMDLKALLLEAKQKVPPVLQVLHC GDESMLDIGGERGCAFCGGLGHRITDCPKLEAMQTKQVSNIGR KDYLAHSSMDF
445	1184	1	375	IETTQPSEDTNANSQDNSMQPETSSQQQLLSPTLSDRGGSRQD AADAGKPQRKFGQWRLPSAPKPISHSVSSVNLRFGGRTTMKSV VCKMNPMTDAASCGSEVKKWWTRQLTVESDESGDDLLDI ·
446	1185	2	223	NDRFSACYFTLKLKEAAVRQREALKKLTKNIATDSYISVNLRD VYARSIMEMLRLKGRERASTRSSGGDDFWF

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447	1186	2	1031	FTVFILGITIRPLVEFLDVKRSNKKQQAVSEEIYCRLFDHVKT GIEDVCGHWGHNFWRDKFKKFDDKYLRKLLIRENQPKSSIVSL YKKLEIKHAIEMAETGMISTVPTFASLNDCREEKIRKVTSSET DEIRELLSRNLYQIRQRTLSYNRHSLTADTSERQAKEILIRRR HSLRESIRKDSSLNREHRASTSTSRYLSLPKNTKLPEKLQKRR TISIADGNSSDSDADAGTTVLNLQPRARRFLPEQFSKKSPQSY KMEWKNEVDVDSGRDMPSTPPTPHSREKGTQTSGLLQQPLLSK DQSGSEREDSLTEGIPPKPPPRLVWRASEPGSRKARFGSEKP
448	1187	3	444	HEEASGLSVWMGKQMEPLHAVPPAAITLILSLLVAVFTECTSN VATTTLFLPIFASMSRSIGLNPLYIMLPCTLSASFAFMLPVAT PPNAIVFTYGHLKVADMVKTGVIMNIIGVFCVFLAVNTWGRAI FDLDHFPDWANVTHIET
449	1188	3	125	HELENNWLQHEKAPTEEGKKELLALSNANPSLLERHCAYL
450	1189	1	188	GNIIYMYMQPGARSSQDQGKFLTLFYNIVTPLLNPLIYTLRNR EVKGALGRLLLGKRELGKE
451	1190	10	1879	PLEQRSNCRVDPRVRTHTMASDTSSLVQSHTYKKREPADVPYQ TGQLHPAIRVADLLQHITQMKCAEGYGFKEEYESFFEGQSAPW DSAKKDENRMKNRYGNIIAYDHSRVRLQTIEGDTNSDYINGNY IDGYHRPNHYIATQGPMQETIYDFWRMVWHENTASIIMVTNLV EVGRVKCCKYWPDDTEIYKDIKVTLIETELLAEYVIRTFAVEK RGVHEIREIRQFHFTGWPDHGVPYHATGLLGFVRQVKSKSPPS AGPLVVHCSAGAGRTGCFIVIDIMLDMAEREGVVDIYNCVREL RSRRVNMVQTEEQYVFIHDAILEACLCGDTSVPASQVRSLYYD MNKLDPQTNSSQIKEEFRTLNMVTPTLRVEDCSIALLPRNHEK NRCMDILPPDRCLPFLITIDGESSNYINAALMDSYKQPSAFIV TQHPLPNTVKDFWRLVLDYHCTSVVMLNDVDPAQLCPQYWPEN GVHRHGPIQVEFVSADLEEDIISRIFRIYNAARPQDGYRMVQQ FQFLGWPMYRDTPVSKRSFLKLIRQVDKWQEEYNGGEGRTVVH CLNGGGRSGTFCAISIVCEMLRHQRTVDVFHAVKTLRNNKPNM VDLLDQYKFCYEVALEYLNSG
452	1191	603	342	PLTYNKKYTYPWWGDALGWLLALSSMVCIPAWSLYRLGTLKGP FRERIRQLMCPAEDLPQRNPAGPSAPATPRTSLLRLTELESHC
453	1192	120	449	TLSESGALFSLGPPPLSLKSSSAPRPYSTLRDCLEHFAELFDL GFPNPLAERIIFETHQIHFANCSLGQPTFSDPPEDVLLAMIIA PICLIPFLITLVVWRSKDSEAQA
454	1193	1838	1066	CEEREQEKDDVDVALLPTIVEKVILPKLTVIAENMWDPFSTTQ TSRMVGITLKLINGYPSVVNAENKNTQVYLKALLLRMRRTLDD DVFMPLYPKNVLENKNSGPYLFFQRQFWSSVKLLGNFLQWYGI FSNKTLQELSIDGLLNRYILMAFQNSEYGDDSIKKAQNVINCF PKQWFMNLKGERTISQLENFCRYLVHLADTIYRNSIGCSDVEK RNARENIKQIVKLLASVRALDHAMSVASDHNVKEFKSLIEGK

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455	1194	112	1361	TPFCFLCSLVFRSRVWAEPCLIDAAKEEYNGVIEEFLATGEKL FGPYVWGRYDLLFMPPSFPFGGMENPCLTFVTPCLLAGDRSLA DVIIHEISHSWFGNLVTNANWGEFWLNEGFTMYAQRRISTILF GAAYTCLEAATGRALLRQHMDITGEENPLNKLRVKIEPGVDPD DTYNETPYEKGFCFVSYLAHLVGDQDQFDSFLKAYVHEFKFRS ILADDFLDFYLEYFPELKKKRVDIIPGFEFDRWLNTPGWPPYL PDLSPGDSLMKPAEELAQLWAAEEELDMKAIEAVAISPWKTYQL VYFLDKILQKSPLPPGNVKKLGDTYPSISNARNAELRLRWGQI VLKNDHQEDFWKVKEFLHNQGKQKYTLPLYHAMMGGSEVAQTL AKETFASTASQLHSNVVNYVQQIVAPKGS
456	1195	1	889	CASGSSGWRPVLWAGAFTMASAELDYTIEIPDQPCWSQKNSPS PGGKEAETRQPVVILLGWGGCKDKNLAKYSAIYHKRGCIVIRY TAPWHMVFFSESLGIPSLRVLAQKLLELLFDYEIEKEPLLFHV FSNGGVMLYRYVLELLQTRRFCRLRVVGTIFDSAPGDSNLVGA LRALAAILERRAAMLRLLLLVAFALVVVLFHVLLAPITALFHT HFYDRLQDAGSRWPELYLYSRADEVVLARDIERMVEARLARRV LARSVDFVSSAHVSHLRDYPTYYTSLCVDFMR\NWVRC
457	1196	2	295	PRVRDRLPSTGVRDRKGDKPWKESGGSVEAPRMGFTHPPGHLS GCQSSLASGETGTGSADPPGGPRPGLTRRAPVKDTPGRAPAAD AAPAGPSSCLG
458	1197	1299	682	QGRTSCIGLYTYQRRICKYRDQYNWFFLARPTTFAIIENLKYF LLKKDPSQPFYLGHTIKSGDLEYVGMEGGIVLSVESMKRLNSL LNIPEKCPEQGGMIWKISEDKQLAVCLKYAGVFAENAEDADGK DVFNTKSVGLSIKEAMTYHPNQVVEGCCSDMAVTFNGLTPNQM HVMMYGVYRLRAFG\HIFNDALVFLPPNGSDND
459	1198	779	61	HEGKPTRGRGRGGSLSTRGRGSEVPDSAHLAPTPLFSESGCCG LRSRFLTDCKMEEGGNLGGLIKMVHLLVLSGAWGMQMWVTFVS GFLLFRSLPRHTFGLVQSKLFPFYFHISMGCAFINLCILASQH AWAQLTFWEASQLYLLFLSLTLATVNARWLEPRTTAAMWALQT VEKERGLGGEVPGSHQGPDPYRQLREKDPKYSALRQNFFRYHG LSSLCNLGCVLSNGLCLA\ALPWK
460	1199	517	815	KQLDKQLRADPSGSLPPLPPSPPPPLEAGGRPPEVP/PRGPSA VPSFPSVSGDWGGPVEAG/EGGQQGRGRARARPCSLPPLLPPS PVCRLSGSRAPLGCDG
461	1200	1	583	RNQLSSQKSVPWVPILKSLPLWAIVVAHFSYNWTFYTLLTLLP TYMKEILRFNVQENGFLSSLPYLGSWLCMILSGQAADNLRAKW NFSTLCVRRIFSLIGMIGPAVFLVAAGFIGCDYSLAVAFLTIS TTLGGFCSSGFSINHLDIAPSYAGILLGITNTFATIPGMVGPV IAKSLTPDMGISLHRPGWSAVA
462	1201	25	383	GPSGTTHASAHSGHPGSPRGSLSRHPSSQLAGPGVEGGEGTQK PRDYIILAILSCFCPMWPVNIVAFAYAVMSRNSLQQGDVDGAQ RLGRVAKLLSIVALVGGVLIIIASCVINLGVYK
463	1202	573	372	SLFLSFPPLSFKMTLNDAMRNKARLSITGSTGENGRVMTPEFP KAVHAVPYVSPGMGMNVSVTDLS

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464	1203	2018	491	DDVPPPAPDLYDVPPGLRRPGPGTLYDVPRERVLPPEVADGGV VDSGVYAVPPPAEREAPAEGKRLSASSTGSTRSSQSASSLEVA GPGREPLELEVAVEALARLQQGVSATVAHLLDLAGSAGATGSW RSPSEPQEPLVQDLQAAVAAVQSAVHELLEFARSAVGNAAHTS DRALHAKLSRQLQKMEDVHQTLVAHGQALDAGRGGSGATLEDL DRLVACSRAVPEDAKQLASFLHGNASLLFRRTKATAPGPEGGG TLHPNPTDKTSSIQSRPLPSPPKFTSQDSPDGQYENSEGGWME DYDYVHLQGKEEFEKTQKELLEKGSITRQGKSQLELQQLKQFE RLEQEVSRPIDHDLANWTPAQPLAPGRTGGLGPSDRQLLLFYL EQCEANLTTLTNAVDAFFTAVATNQPPKIFVAHSKFVILSAHK LVFIGDTLSRQAKAADVRSQVTHYSNLLCDLLRGIVATTKAAA LQYPSPSAAQDMVERVKELGHSTQQFRRVLGQLAAA
465	1204	299	189	EMEEPQKSYVNTMDLERDEPLKSTGPQISVSEFSCHCCYDILV NPTTLNCGHSFCRHCLALWWASSKKTECPECREKWEGFPKVSI LLRDAIEKLFPDAIRLRFEDIQQNNDIVQSLAAFQKYGNDQIP LAPNTGRANQQMGGGFFSGVLTALTGVAVVLLVYHWSSRESEH DLLVHKAVAKWTAEEVVLWLEQLGPWASLYRERFLSERVNGRL LLTLTEEEFSKTPYTIENSSHRRAILMELERVKALGVKPPQNL WEYKAVNPGRSLFLLYALKSSPRLSLLYLYLFDYTDTFLPFIH TICPLQEDSSGEDIVTKLLDLKEPTWKQWREFLVKYSFLPYQL IAEFAWDWLEVHYWTSRFLIINAMLLSVLELFSFWRIWSRSEL K*VGFRFLRLGVAALGSVEVAGLRGVVKGERPLLYGHGAGARF PHSVLLLPVAKPLPLPLLPRGLC
466	1205	2	242	EKARMIYEDYISILSPKEVSLDSRVREVINRNLLDPNPHMYED AQLQIYTLMHRDSFPRFLNSQIYKSFVESTAGSSSES
467	1206	2	619	LYYSQDEESKIMISDFGLSKMEGKGDVMSTACGTPGYVAPEVL AQKPYSKAVDCWSIGVIAYILLCGYPPFYDENDSKLFEQILKA EYEFDSPYWDDISDSAKDFIRNLMEKDPNKRYTCEQAARHPWI AGDTALNKNIHESVSAQIRKNFAKSKWRQAFNATAVVRHMRKL HLGSSLDSSNASVSSSLSLASQKDCASGTFHAL
468	1207	1	352	RTRGGAVSFEDFIKGLSILLRGTVQEKLNWAFNLYDINKDGYI TKEEMLDIMKAIYDMMGKCTYPVLKEDAPRQHVETFFQKMDKN KDGVVTIDEFIESCQKDENIMRSMQLFENVI
469	1208	3	1015	PRSPEHHTPAWHEGRSLGPIMASMADRNMKLFSGRVVPAQGEE TFENWLTQVNGVLPDWNMSEEEKLKRLMKTLRGPAREVMRVLQ ATNPNLSVADFLRAMKLVFGESESSVTAHGKFFNTLQAQGEKA SLYVIRLEVQLQNAIQAGIIAEKDANRTRLQQLLLGGELSRDL RLRLKDFLRMYANEQERLPNFLELIKMVREEEDWDDAFIKRKR PKRSESMVERAVSPVAFQGSPPIVIGSADCNVIEIDDTLDDSD EDVILVESQDPPLPSWGAPPLRDRARPQDEVLVIDSPHNSRAQ FPSTSGGSGYKNNGPGEMRRARKRKHTIRCSYCGEE
470	1209	1543	1351	SVACTVPLRSMSDPDQDFDKEPDSDSTKHSTPSNSSNPSGPPS PNSPHRSQLPLEGLEQPACDT

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471	1210	3	952	YSAVEFAERGSGGSSGDELREDDEPVKKRGRKGRGRGPPSSSD SEPEAELEREAKKSAKKPQSSSTEPARKPGQKEKRVRPEEKQQ AKPVKVERTRKRSEGFSMDRKVEKKKEPSVEEKLQKLHSEIKF ALKVDSPDVKRCLNALEELGTLQVTSQILQKNTDVVATLKKIR RYKANKDVMEKAAEVYTRLKSRVLGPKIEAVQKVNKAGMEKEK AEEKLAGEELAGEEAPQEKAEDKPSTDLSAPVNGEATSQKGES AEDKEHEEGRDSEEGPRCGSSEDLHDSVREGPDLDRPGSDRQE RERARGDSEALDEES
472	1211	5204	2901	LAELSSLSVLRLSHNSISHIAEGAFKGLRSLRVLDLDHNEISG TIEDTSGAFSGLDSLSKLTLFGNKIKSVAKRAFSGLEGLEHLN LGGNAIRSVQFDAFVKMKNLKELHISSDSFLCDCQLKWLPPWL IGRMLQAFVTATCAHPESLKGQSIFSVPPESFVCDDFLKPQII TQPETTMAMVGKDIRFTCSAASSSSSPMTFAWKKDNEVLTNAD MENFVHVHAQDGEVMEYTTILHLRQVTFGHEGRYQCVITNHFG STYSHKARLTVNVLPSFTKTPHDITIRTTTMARLECAATGHPN PQIAWQKDGGTDFPAARERRMHVMPDDDVFFITDVKIDDAGVY SCTAQNSAGSISANATLTVLETPSLVVPLEDRVVSVGETVALQ CKATGNPPPRITWFKGDRPLSLTERHHLTPDNQLLVVQNVVAE DAGRYTCEMSNTLGTERAHSQLSVLPAAGCRKDGTTVGIFTIA VVSSIVLTSLVWVCIIYQTRKKSEEYSVTNTDETVVPPDVPSY LSSQGTLSDRQETVVRTEGGPQANGHIESNGVCPRDASHFPEP DTHSVACRQPKLCAGSAYHKKPWKAMEKAEGTPGPHKMEHGGR VVCSDCNTEVDCYSRGQAFHPQPVSRDSAQPSAPNGPEPGGSD QEHSPHHQCSRTAAGSCPECQGSLYPSNHDRMLTAVKKKPMAS LDGKGDSSWTLARLYHPDSTELQPASSLTSGSPERAEAQYLLV SNGHLPKACDASPESTPLTGQLPGKQRVPLLLAPKS

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473	1212	2	2466	AAAGAARRVSVRCGRSGPGPGRGAAGLSPADIALASEQGASCS VRAPERKLRMKLLWQAKMSSIQDWGEEVEEGAVYHVTLKRVQI QQAANKGARWLGVEGDQLPPGHTVSQYETCKIRTIKAGTLEKL VENLLTAFGDNDFTYISIFLSTYRGFASTKEVLELLLDRYGNL TSPNCEEDGSQSSSESKMVIRNAIASILRAWLDQCAEDFREPP HFPCLQKLLDYLTRMMPGSDPERRAQNLLEQFQKQEVETDNGL PNTISFSLEEEEELEGGESAEFTCFSEDLVAEQLTYMDAQLFK KVVPHHCLGCIWSRRDKKENKHLAPTIRATISQFNTLTKCVVS TILGGKELKTQQRAKIIEKWINIAHECRLLKNFSSLRAIVSAL QSNSIYRLKKTWAAVPRDRMLMFEELSDIFSDHNNHLTSRELL MKEGTSKFANLDSSVKENQKRTQRRLQLQKDMGVMQGTVPYLG TFLTDLTMLDTALQDYIEGGLINFEKRRREFEVIAQIKLLQSA CNSYCMTPDQKFIQWFQRQQLLTEEESYALSCEIEAAADASTT SPKPWKSMVKRLNLLFLGADMITSPTPTKEQPKSTASGSSGES MDSVSVSSCESNHSEAEEGYITPMDTPDEPQKKLSESSSYCSS IHSMDTNFLQGMSSLINPLSSPPSCNNNPKIHKRSVSVTSITS TVLPPVYNQQNEDTCIIRISVEDNNGNMYKSIMLTSQDKTPAV IQRAMLKHNLDSDPAEEYELVQVISEDKELVIPDSANVFYAMN SQVNFDFILRKKNSMEEQVKLRSRTSLTLPRTAKRGCWSNRHS KITL
474	1213	1	867	AREKMDSCIEAFGTTKQKRALNTRRMNRVGNESLNRAVAKAAE TIIDTKGVTALVSDAIHNDLQDDSLYLPPCYDDAAKPEDVYKF EDLLSPAEYEALQSPSEAFRNVTSEEILKMIEENSHCTFVIEA LKSLPSDVESRDRQARCIWFLDTLIKFRAHRVVKRKSALGPGV PHIINTKLLKHFTCLTYNNGRLRNLISDSMKAKITAYVIILAL HIHDFQIDLTVLQRDLKLSEKRMMEIAKAMRLKISKRRVSVAA GSEEDHKLGTLSLPLPPAQTSDRLAKRRKIT

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475	1214	2	2621	LSLFGSRALGRSGARAMAKAKKVGARRKASGAPAGARGGPAKA NSNPFEVKVNRQKFQILGRKTRHDVGLPGVSRARALRKRTQTL LKEYKERDKSNVFRDKRFGEYNSNMSPEEKMMKRFALEQQRHH EKKSIYNLNEDEELTHYGQSLADIEKHNDIVDSDSDAEDRGTL SGELTAAHFGGGGGLLHKKTQQEGEEREKPKSRKELIEELIAK SKQEKRERQAQREDALELTEKLDQDWKEIQTLLSHKTPKSENR DKKEKPKPDAYDMMVRELGFEMKAQPSNRMKTEAELAKEEQEH LRKLEAERLRRMLGKDEDENVKKPKHMSADDLNDGFVLDKDDR RLLSYKDGKMNVEEDVQEEQSKEASDPESNEEEGDSSGGEDTE ESDSPDSHLDLESNVESEEENEKPAKEQRQTPGKGLISGKERA GKATRDELPYTFAAPESYEELRSLLLGRSMEEQLLVVERIQKC NHPSLAEGNKAKLEKLFGFLLEYVGDLATDDPPDLTVIDKLVV HLYHLCQMFPESASDAIKFVLRDAMHEMEEMIETKGRAALPGL DVLIYLKITGLLFPTSDFWHPVVTPALVCLSQLLTKCPILSLQ DVVKGLFVCCLFLEYVALSQRFIPELINFLLGILYIATPNKAS QGSTLVHPFRALGKNSELLVVSAREDVATWQQSSLSLRWASRL RAPTSTEANHIRLSCLAVGLALLKRCVLMYGSLPSFHAIMGPL RALLTDHLADCSHPQELQELCQSTLTEMESQKQLCRPLTCEKS KPVPLKLFTPRLVKVLEFGRKQGSSKEEQERKRLIHKHKREFK GAVREIRKDNQFLARMQLSEIMERDAERKRKVKQLFNSLATQE GEWKALKRKKFKK
476	1215	3	961	LTKQEDCCGSIGTAWGQSKCHKCPQLQYTGVQKPGPVRGEVGA DCPQGYKRLNSTHCQDINECAMPGVCRHGDCLNNPGSYRCVCP PGHSLGPSRTQCIADKPEEKSLCFRLVSPEHQCQHPLTTRLTR QLCCCSVGKAWGARCQRCPTDGTAAFKEICPAGKGYHILTSHQ TLTIQGESDFSLFLHPDGPPKPQQLPESPSQAPPPEDTEEERG VTTDSPVSEERSVQQSHPTATTTPARPYPELISRPSPPTMRWF LPDLPPSRSAVEIAPTQVTETDECRLNQNICGHGECVPGPPDY SCHCNPGYRSHPQHRYCV

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477	1216	3652	1207	MAGGHCGSFPAAAAGSGEIVQLNVGGTRFSTSRQTLMWIPDSF FSSLLSGRISTLRDETGAIFIDRDPAAFAPILNFLRTKELDLR GVSINVLRHEAEFYGITPLVRRLLLCEELERSSCGSVLFHGYL PPPGIPSRKINNTVRSADSRNGLNSTEGEARGNGTQPVLSGTG EETVRLGFPVDPRKVLIVAGHHNWIVAAYAHFAVWYRIKESSG WQQVFTSPYLDWTIERVALNAKVVGGPHGDKDKMVAVASESSI ILWSVQDGGSGSEIGVFSLGVPVDALFFIGNQLVATSHTGKVG VWNAVTQHWQVQDVVPITSYDTAGSFLLLGCNNGSIYYIDMQK FPLRMKDNDLLVTELYHDPSNDAITALSVYLTPKTSVSGNWIE IAYGTSSGAVRVIVQHPETVGSGPQLFQTFTVHRSPVTKIMLS EKHLVSVCADNNHVRTWTVTRFRGMISTQPGSTPLASFKILSL EETESHGSYSSGNDIGPFGERDDQQVFIQKVVPITNKLFVRLS STGKRICEIQAVDCTTISSFTGRECEGSSRMGSRPRRYLFTGH TNGSIQMWDLTTAMDMVNKSEDKDVGGPTEEELLKLLDQCDLS TSRCATPNISPATSVVQHSHLRESNSSLQLQHHDTTHEAATYG SMRPYRESPLLARARRTESFHSYRDFQTINLNRNVERAVPENG NLGPIQAEVKGATGECNISERKSPGVEIKSLRELDSGLEVHKI AEGFSESKKRSSEDENENKIEFRKKGGFEGGGFLGRKKVPYLA SSPSTSDGGTDSPGTASPSPTKTTPSPRHKKSDSSGQEYSL
478	1217	1	1379	RRPTRPILTDELFKRTIQLPHLKTLILNGNKLETLSLVSCFAN NTPLEHLDLSQNLLQHKNDENCSWPETVVNMNLSYNKLSDSVF RCLPKSIQILDLNNNQIQTVPKETIHLMALRELNIAFNFLTDL PGCSHFSRLSVLNIEMNFILSPSLDFVQSCQEVKTLNAGRNPF RCTCELKNFIQLETYSEVMMVGWSDSYTCEYPLNLRGTRLKDV HLHELSCNTALLIVTIVVIMLVLGLAVAFCCLHFDLPWYLRML GQCTQTWHRVRKTTQEQLKRNVRFHAFISYSEHDSLWVKNELI PNLEKEDGSILICLYESYFDPGKSISENIVSFIEKSYKSIFVL SPNFVQNEWCHYEFYFAHHNLFHENSDHIILILLEPIPFYCIP TRYHKLKALLEKKAYLEWPKDRRKCGLFWANLRAAINVNVLAT REMYELQTFTELNEESRGSTISLMRTDCL
479	1218	1	1099	PTRPPTRPPTRPLLTPSWTSTGRMWSHLNRLLFWSIFSSVTCR KAVLDCEAMKTNEFPSPCLDSKTKVVMKGQNVSMFCSHKNKSL QITYSLFRRKTHLGTQDGKGEPAIFNLSITEAHESGPYKCKAQ VTSCSKYSRDFSFTIVDPVTSPVLNIMVIQTETDRHITLHCLS VNGSLPINYTFFENHVAISPAISKYDREPAEFNLTKKNPGEEE EYRCEAKNRLPNYATYSHPVTMPSTGGDSCPFCLKLLLPGLLL LLVVIILILAFWVLPKYKTRKAMRNNVPRDRGDTAMEVGIYAN ILEKQAKEESVPEVGSRPCVSTAQDEAKHSQELQYATPVFQEV APREQEACDSYKSGYVYSELNF
480	1219	1	293	FFFFEERRTGSHSVGHPRMEYSGVSMAHCSLNLLGSSNSPSSA SQDARTTGACQHAQLIGFFFF\VETASPQVTHAG/LKHLVSRN PSAVTSQSARIKT

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481	1220	1	727	NREGARKIQNKWLRPSPRSHRTPESVSPERYSYGTSSSSKRTE GSCRRRRQSSSSANSQQGQWETGSPPTKRQRRSRGRPSGGAKR RRRGAPAAPQQQSEPARPSSEGKVTCDIRLRVRAEYCEHGPAL EQGVASRRPQALARQLDVFGQATAVLRSRDLGSVVCDIKFSEL SYLDAFWGDYLSGALLQALRGVFLTEALREAVGREAVRLLVSV DEADYEAGRRRLLLMEEEGGRRPTEAS
482	1221	1	1321	APNTAELRICRVNKNCGSVRGGDEIFLLCDKVQKDDIEVRFVL NDWEAKGIFSQADVHRQVAIVFKTPPYCKAITEPVTVKMQLRR PSDQEVSESMDFRYLPDEKDTYGNKAKKQKTTLLFQKLCQDHV ETGFRHVDQDGLELLTSGDPPTLASQSAGITVNFPERPRPGLL GSIGEGRYFKKEPNLFSHDAVVREMPTGVSSQAESYYPSPGPI SSGLSHHASMAPLPSSSWSSVAHPTPRSGNTNPLSSFSTRTLP SNSQGIPPFLRIPVGNDLNASNACIYNNADDIVGMEASSMPSA DLYGISDPNMLSNCSVNMMTTSSDSMGETDNPRLLSMNLENPS CNSVLDPRDLRQLHQMSSSSMSAGANSNTTVFVSQSDAFEGSD FSCADNSMINESGPSNSTNPNSHGFVQDSQYSGIGSMQNEQLS DSFPYEFFQV
483	1222	1	1311	RRLSLLDLQLGPLGRDPPQECSTFSPTDSGEEPGQLSPGVQFQ RRQNQRRFSMEDVSKRLSLPMDIRLPQEFLQKLQMESPDLPKP LSRMSRRASLSDIGFGKLETYVKLDKLGEGTYATVFKGRSKLT ENLVALKEIRLEHEEGAPCTAIREVSLLKNLKHANIVTLHDLI HTDRSLTLVFEYLDSDLKQYLDHCGNLMSMHNVKIFMFQLLRG LAYCHHRKILHRDLKPQNLLINERGELKLADFGLARAKSVPTK TYSNEVVTLWYRPPDVLLGSTEYSTPIDMWGVGCIHYEMATGR PLFPGSTVKEELHKINRLLGTPTEETWPGVTAFSEFRTYSFPC YLPQPLINHAPRLDTDGIHLLSSLLLYESKSRMSAEAALSHSY FRSLGERVHQLEDTASIFSLKEIQLQKDPGYRGLAFQQPGRGK NRRQSIF
484	1223	807	356	CTPHGSSSSWKIPLWPRHMSPLHSCLPVGTSTSSGPLAVPRDC FHLCCLWGQLLLISCPLACGQGCRVAGGQQHVPGQALGTLSPL VSLLTWAGPSLDWPHPGSLVTPRCPILPAVPVLVKGLGGWPPT RPSRAAPVSGPWDQLPYFPGL
485	1224	1199	370	LISPVWGNIQRSRSVPLFPSGLVLGGIWARGPLLALLASFNII SVLNAECYLKQILHPTSHFTVSETPPLSGNDTDSLSCDSGSSA TSTPCVSRLVTGHHLWASKNGRHVLGLIEDYEALLKQISQGQR LLAEMDIQTQEAPSSTSQELGTKGPHPAPLSKFVSSVSTAKLT LEEAYRRLKLLWRVSLPEDGQCPLHCEQIGEMKAEVTKLHKKL FEQEKKLQNTMKLLQLSKRQEKVIFDQLVVTHKILRKARGNLE LRPGGAHPGTCSPSRPGS

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486	1225	2469	1660	LGLFCILPIDTLCAVLERDTLSIRESRLFGAVVRWAEAECQRQ QLPVTFGNKQKVLGKALSLIRFPLMTIEEFAAGPAQSGILSDR EVVNLFLHFTVNPKPRVEYIDRPRCCLRGKECCINRFQQVESR WGYSGTSDRIRFTVNRRISIVGFGLYGSIHGPTDYQVNIQIIE YEKKQTLGQNDTGFSCDGTANTFRVMFKEPIEILPNVCYTACA TLKGPDSHYGTKGLKKVVHETPAASKTVFFFFSSPGNNNGTSI EDGQIPEIIFYT
487	1226	1193	372	SVWWNSEVKDWMQKKRRGLRNSRATAGDIAHYYRDYVVKKGLG HNFVSGAVVTAVEWGTPDPSSCGAQDSSPLFQVSGFLTRNQAQ QPFSLWARNVVLATGTFDSPARLGIPGEALPFIHHELSALEAA TRVGAVTPASDPVLIIGAGLSAADAVLYARHYNIPVIHAFRRA VDDPGLVFNQLPKMLYPEYHKVHQMMREQSILSPSPYEGYRSL PRHQLLCFKEDCQAVFQDLEGVEKVFGVSLVLVLIGSHPDLSF LPGAG\LTLQWILTSR
488	1227	756	1016	KLRPFIFSNQSLWLHSYEGAELEKTFIKGSWATFWVKVASCWA CVLLYLGLLLAPLCWPPTQKPQPLILRRRHRIISPDNKYPPV
489	1228	1	747	QLIHLSHGYQIHWTDYYNVGTGRPEFGTRAAHKSLAGAELKTL KDFVTVLAKLFPGRPPVKKLLEMLQEWLASLPLDRIPYNAVLD LVNNKMRISGIFLTNHIKWVGCQGSRSELRGYPCSLWKLFHTL TVEASTHPDALVGTGFEDDPQAVLQTMRRYVHTFFGCKECGEH FEEMAKESMDSVKTPDQAILWLWKKHNMVNGRLAGEKPLGMGG SARAEGGPGPGTARTARLPWGLSLSFAASCHPLC
490	1229	4797	2398	HGGATFINAFVTTPMCCPSRSSMLTGKYVHNHNVYTNNENCSS PSWQAMHEPRTFAVYLNNTGYRTAFFGKYLNEYNGSYIPPGWR EWLGLIKNSRFYNYTVCRNGIKEKHGFDYAKDYFTDLITNESI NYFKMSKRMYPHRPVMMVISHAEPHGPEDSAPQFSKLYPNASQ HITPSYNYAPNMDKHWIMQYTGPMLPIHMEFTNILQRKRLQTL MSVDDSVERLYNMLVETGELENTYIIYTADHGYHIGQFGLVKG KSMPYDFDIRVPFFIRGPSVEPGSIVPQIVLNIDLAPTILDIA GLDTPPDVDGKSVLKLLDPEKPGNRFRTNKKAKIWRDTFLVER GKFLRKKEESSKNIQQSNHLPKYERVKELCQQARYQTACEQPG QKWQCIEDTSGKLRIHKCKGPSDLLTVRQSTRNLYARGFHDKD KECSCRESGYRASRSQRKSQRQFLRNQGTPKYKPRFVHTRQTR SLSVEFEGEIYDINLEEEEELQVLQPRNIAKRHDEGHKGPRDL QASSGGNRGRMLADSSNAVGPPTTVRVTHKCFILPNDSIHCER ELYQSARAWKDHKAYIDEEIEALQDKIKNLREVRGHLKRRKPE ECSCSKQSYYNKEKGVKKQEKLKSHLHPFKEAAQEVDSKLQLF KENNRRRKKERKEKRRQRKGEECSLPGLTCFTHDNNHWQTAPF WNLGSFCACTSSNNNTYWCLRTVNETHNFLFCEFATGFLEYFD MNTDPYQLTNTVHTVERGILNQLHVQLMELRSCQGYKQCNPRP KNLDVGNKDGGSYDLHRGQLWDGWEG

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491	1230	2480	385	HLLIAQELADRVGEGRACWSLGNAYVSMGRPAQALTFAKKHLQ ISQEIGDRHGELTARMNVAQLQLVLGRLTSPAASEKPDLAGYE AQGARPKRTQRLSAETWDLLRLPLEREQNGDSHHSGDWRGPSR DSLPLPVRSRKYQEGPDAERRPREGSHSPLDSADVRVHVPRTS IPRAPSSDEECFFDLLTKFQSSRMDDQRCPLDDGQAGAAEATA APTLEDRIAQPSMTASPQTEEFFDLIASSQSRRLDDQRASVGS LPGLRITHSNAGHLRGHGEPQEPGDDFFNMLIKYQSSRIDDQR CPPPDVLPRGPTMPDEDFFSLIQRVQAKRMDEQRVDLAGGPGA GGRRPARAPAAVPAWCELRPCAHRQAHPAPTPGRRSHSHSHVL PRPLPRTGTGHAAPRPPRPRATGSGQAARGGRACFHPGLAPMA LSFLPSAPAAGRTGPSACRPRPGAVRLPHPLPQALPVLPCPAK CETLLSPSPSPKVSLSRLLGPPRTGPCSVPPELVLGWPCDRHA PPLQLRPGAGLPPSLSPHSPARGQQPQKAPQTTHGRPGCSGSP EVPPAESQGPAGASTGAGPISKAEGMAGHELRHSKTPSQEKGQ GLVLGMLTGSKSSAQSGWEVAPGSVTLTQVGGWSVEAGEASLS STLQTPHMRTPLLPPAGGDDITALSMGRGLTGHQVRDPRTGRT CWSLRWAPGA
492	1231	3	398	NSAADLAIFALWGLKPVVYLLASSFLGLGLHPISGHFVAEHYM FLKGHETYSYYGPLNWITFNVGYHVEHHDFPSIPGYNLPLVRK IAPEYYDHLPQHHSWVKVLWDFVFEDSLGPYARVKRVYRLAKD GL
493	1232	1	214	QESGFSCKGPGQNVAVTRAHPDSQGRRRRPERGARGGQVFYNS EYGELSEPSEEDHCSPSARVTFFTDNSY
494	1233	3	443	VIVHARPIRTRASKYYIPEAVYGLPAYPAYAGGGGFVLSGATL HRLAGACAQVELFPIDDVFLGMCLQRLRLTPEPHPAFRTFGIP QPSAAPHLSTFDPCFYRELVVVHGLSAADIWLMWRLLHGPHGP ACAHPQPVAAGPFQWDS
495	1234	1	897	MASAACSMDPIDSFELLDLLFDRQDGILRHVELGEGWGHVKDQ VLPNPDSDDFLSSILGSGDSLPSSPLWSPEGSDSGISEDLPSD PQDTPPRSGPATSPAGCHPAQPGKGPCLSYHPGNSCSTTTPGP VIQQQHHLGASYLLRPGAGHCQELVLTEDEKKLLAKEGITLPT QLPLTKYEERVLKKIRRKIRNKQSAQESRKKKKEYIDGLETRS CCCPLPSSSSPPSALLAPTKPRALGTLRLYECSPELCTTMLPP AWLLMLCQAPRPQDPDPRLTQPEKSLQEAPGQTGASRTPRT

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496	1235	4235	940	ARGRRSRPVWAASWGGRGRPAARRRPRGLAATMGFELDRFDGD VDPDLKCALCHKVLEDPLTTPCGHVFCAGCVLPWVVQEGSCPA RCRGRLSAKELNHVLPLKRLILKLDIKCAYATRGCGRVVKLQQ LPEHLERCDFAPARCRHAGCGQVLLRRDVEAHMRDACDARPVG RCQEGCGLPLTHGEQRAGGHCCARALRAHNGALQARLGALHKA LKKEALRAGKREKSLVAQLAAAQLELQMTALRYQKKFTEYSAR LDSLSRCVAAPPGGKGEETKSLTLVLHRDSGSLGFNIIGGRPS VDNHDGSSSEGIFVSKIVDSGPAAKEGGLQIHDRIIEVNGRDL SRATHDQAVEAFKTAKEPIVVQVLRRTPRTKMFTPPSESQLVD TGTQTDITFEHIMALTKMSSPSPPVLDPYLLPEEHPSAHEYYD PNDYIGDIHQEMDREELELEEVDLYRMNSQDKLGLTVCYRTDD EDDIGIYISEIDPNSIAAKDGRIREGDRIIQINGIEVQNREEA VALLTSEENKNFSLLIARAELQLDEGWMDDDRNDFLDDLHMDM LEEQHHQAMQFTASVLQQKKHDEDGGTTDTATILSNQHEKDSG VGRTDESTRNDESSEQENNGDDATASSNPLAGQRKLTCSQDTL GSGDLPFSNKSFISPECTGAAYLGIPVDECERFRELLELKCQV KSATPYGLYYPSGPLDAGKSDPESVDKELELLNEELRSIELEC LSIVRAHKMQQLKEQYRESWMLHNSGFRNYNTSIDVRRHELSD ITELPEKSDKDSSSAYNTGESCRSTPLTLEISPDNSLRRAAEG ISCPSSEGAVGTTEAYGPASKNLLSITEDPEVGTPTYSPSLKE LDPNQPLESKERRASDGSRSPTPSQKLGSAYLPSYHHSPYKHA HIPAHAQHYQSYMQLIQQKSAVEYAQSQMSLVSMCKDLSSPTP SEPRMEWKVKIRSDGTRYITKRPVRDRLLRERALKIREERSGM TTDDDAVSEMKMGRYWSKEERKQHLVKAKEQRRRREFMMQSRL DCLKEQQAADDRKEMNILELSHKKMMKKRNKKIFDNWMTIQEL LTHGTKSPDGTRVYNSFLSVTTV
497	1236	2	157	FFFLVEMGFCHVGQGGLTLIGSSNLPASASKSAGITGVSHCAR PDFKSCVE
498	1237	1	211	LAGRKVLLFVSGYVVGWGPITWLLMSEVLPLRARGVASGLCVL ASWLTAFVLTKSFLPGGVSVQPQAPGP
499	1238	2	345	FWAPGPPGVGAAVGDASTRSLRESCPSPSPGRLRRTTAPWSSQ ARAAAPAPSSSCRGPDGASSPRDLPWRPWKILRRTPLSGDVEL SQVHPDQRILRRFILSRTCGNTIPGMAE
500	1239	1	523	MRRFLSKVYSFPMRKLILFLVFPVVRQTPTQHFKNQFPALHWE HELGLAFTKNRMNYTNKFLLIPESGDYFIYSQVTFRGMTSECS EIRQAGRPNKPDSITVVITKVTDSYPEPTQLLMGTKSVCEVGS NWFQPIYLGAMFSLQEGDKLMVNVSDISLVDYTKEDKTFFGAF LL

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501	1240	2	1277	FVWDEVAQRSGCEERWLVIDRKVYNISEFTRRHPGGSRVISHY AGQDATDPFVAFHINKGLVKKYMNSLLIGELSPEQPSFEPTKN KELTDEFRELRATVERMGLMKANHVFFLLYLLHILLLDGAAWL TLWVFGTSFLPFLLCAVLLSAVQAQAGWLQHDFGHLSVFSTSK WNHLLHHFVIGHLKGAPASWWNHMHFQHHAKPNCFRKDPDINM HPFFFALGKILSVELGKQKKKYMPYNHQHKYFFLIGPPALLPL YFQWYIFYFVIQRKKWVDLAWMITFYVRFFLTYVPLLGLKAFL GLFFIVRFLESNWFVWVTQMNHIPMHIDHDRNMDWVSTQLQAT CNVHKSAFNDWFSGHLNFQIEHHLFPTMPRHNYHKVAPLVQSL CAKHGIEYQSKPLLSAFADIIHSLKESGQLWLDAYLHQ
502	1241	999	540	QCGGIPYNTTQFLMNDRDPEEPNLDVPHGISHPGSSGESEAGD SDGRGRAHGEFQRKDFSETYERFHTESLQGRSKQELVRDYLEL EKRLSQAEEETRRLQQLQACTGQQSCRQVEELAAEVQRLRTEN QRLRQENQMWNREGCRCDEEPGT
503	1242	1448	875	SPERSSLSVGREKAMEVPPPAPRSFLCRALCLFPRVFAAEAVT ADSEVLEERQKRLPYVPEPYYPESGWDRLRELFGKD\VTGSLF RINVGLRGLVAGGIIGALLGTPVGGLLMAFQKYSGETVQERKQ KDRKALHELKLEEWKGRLQVTEHLPEKIESSLQEDEPENDAKK IEALLNLPRNPSVIDKQDKD
504	1243	149	1293	RSLGLAVTEMVPWVRTMGQKLKQRLRLDVGREICRQYPLFCFL LLCLSAASLLLNRYIHILMIFWSFVAGVVTFYCSLGPDSLLPN IFFTIKYKPKQLGLQELFPQGHSCAVCGKVKCKRHRPSLLLEN YQPWLDLKISSKVDASLSEVLELVLENFVYPWYRDVTDDESFV DELRITLRFFASVLIRRIHKVDIPSIITKKLLKAAMKHIEVIV KARQKVKNTEFLQQAALEEYGPELHVALRSRRDELHYLRKLTE LLFPYILPPKATDCRSLTLLIREILSGSVFLPSLDFLADPDTV NHLLIIFIDDSPPEKATEPASPLVPFLQKFAEPRNKKPSVLKL ELKQIREQQDLLFRFMNFLKQEGAVHVLHVLFDCGGI
505	1244	2	1116	QSLAEVLQQLGASSELQAVLSYIFPTYGVTPNHSAFSMHALLV NHYMKGGFYPRGVTSEIAFHTIPVIQRAGGAVLTKATVQSVLL DSAGKACGVSVKKGHELVNIYCPIVVSNAGLFNTYEHLLPGNA RCLPGVKQQLGTVRPGLGMTSVFICLRGTKEDLHLPSTNYYVY YDTDMDQAMERYVSMPREEAAEHIPLLFFAFPSAKDPTWEDRF PGRSTMIMLIPTAYEWFEEWQAELKGK\RGSDYETFKNSFVEA SMSVVLKLFPQLEGKVESVTAGSPLTNQFYL\AAPRGACYGAD HDLGRLHPCVMASLRAQSPIPNLYLTGQDIFTCGLVGALQGAL LCSSTILKRNLYSDLKNLDSRIRAQKKKN
506	1245	1759	873	RPQETRVLQVSCGRAHSLVLTDREGVFSMGNNSYGQCGRKVVE NEIYSESHRVHRMQDFDGQVVQVACGQDHSLFLTDKGEVYSCG WGADGQTGLGHYNITSSPTKLGGDLAGVNVIQVATYGDCCLAV SADGGLFGWGNSEYLQLASVTDSTQVNVPRCLHFSGVGKVRQA ACGGTGCAVLNGEGHVFVWGYGILGKGPNLVESAVPEMIPPTL FGLTEFNPEIQVSRIRCGLSHFAALTNKGELFVWGKNIRGCLG IGRLEDQYFPWRVTMPGEPVDVACGVDHMVTLAKSFI

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507	1246	520	2	LPFREWLMIVVSLSAAAVAAAFMAKCRMVLSSRYFCSHFVMSA SRARIRSSFSRTSSRRAGALYSGMLAGWPFPCFCWVLSASSSL SSQVRSLRSICSRFSHADCSWVRACCSFSTFSTYACFSRNSSS SLMTLAWALLKAWSRISMCLRWSSLAVRTAANSISNFSFSFKN
508	1247	1	1083	MQAVRATASQSLSCARAPREPTQHALRAHWFPPAAAVQPSPHS GVAAAAGTWSSAFRGEHPLVSSGLLLGVREQSFRLLRSKAGTH MYLEHTSHCPHHDDDTAMDTPLPRPRPLLAVERTGQRPLWAPS LELPKPDMQPLPAGAFLEEVAEGTPAQTESEPKVLDPEEDLLC IAKTFSYLRESGWYWGSITASEARQHLQKMPEGTFLVRDSTHP SYLFTLSVKTTRGPTNVRIEYADSSFRLDSNCLSRPRILAFPD VVSLVQHYVASCTADTRSDSPDPAPTPALPMPKEDAPSDPALP APPPATAVHLKLVQPFVRRSSARSLQHLCRLVINRLVADVDCL PLPRRMADYLRQYPFQL
509	1248	2	841	FVDIFQRWKECRGKSPAQAELSYLNKAKWLEMYGVDMHVVRGR DGCEYSLGLTPTGILIFEGANKIGLFFWPKITKMDFKKSKLTL VVVEDDDQGREQEHTFVFRLDSARTCKHLWKCAVEHHAFFRLR TPGNSKSNRSDFIRLGSRFRFSGRTEYQATHGSRLRRTSTFER KPSKRYPSRRHSTFKASNPVIAAQLCSKTNPEVHNYQPQYHPN IHPSQPRWHPHSPNVRPSFQDDRSHWKASASGDDSHFDYVHDQ NQKNLGGMQSMMYRDKLMTAL
510	1249	2	763	GGIRLIQKLTWRSRQQDRENCAMKGKHKDECHNFIKVFVPRND EMVFVCGTNAFNPMCRYYRVSIFYVICFF*STFLPSLICC*S* NLSAFQ*FVLSLVQ*KNKDRILQMEF*YK*NSIAFKRAR*IDM TLAIYFSFV\LSTL*YDGEEISGLARCPFDARQTNGALFADGK LYSATVADFLASDAVIYRSMGDGSALRTIKYDSKWIKE/PHFL YAIK/Y/GNYVYFSFREIVAT**LG/KAVDS/RVARYEKQLVG PTV
511	1250	1555	629	ARALARERESESARADDVTLGVSAILAVDRGGNLGSA\DGWAY IDVEVRRPWAFVGPGCSRSSGNGSTAYGLVGSPRWLSPFHTGG AVSLPRRPRGPGPVLGVARPCLRCVLRPE\HYEPGSHYSGFAG RDASRAFVTGDCSEAGLVDDVSDLSAAEMLTLHNWLSFYEKNY VCVGRVTGRFYGEDGLPTPALTQVEAAITRGLEANKLQLQEKQ TFPPCNAEWSSARGSRLWCSQKSGGVSRDWIGVPRKLYKPGAK EPRCVCVRTTGPPSGQMPDNPPHRNRGDLDHPNLAEYTGCPPL AITCSFPL
512	1251	1100	798	YFIICRDGVLLFCPGWSQTPGAQAILLHWATQNAGMTDMSHSA QPIYLFIYLIRTRSHYVAQAGQLLDSNDSPNVASQNVGITGMS HHAWLKIVLYFCII

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513	1252	3	1395	PAARPPSLVRLSPSPPKPRARARAPQSVEPAAPLVARGSSPPA RPAPAMVRPRRAPYRSGAGGPLGGRGRPPRPLVVRAVRSRSWP ASPRGPQPPR\IRARSAPPMEGARVFGALGPIGPSSPGLTLGG LAVSEHRLSNKLLAWSGVLEWQEKRRPYSDSTAKLKRTLPCQA YVNQGENLETDQWPQKLIMQLIPQQLLTTLGPLFRNSQLAQFH FTNRDCDSLKGLCRIMGNGFAGCMLFPHISPCEVRVLMLLYSS KKKIFMGLIPYDQSGFVSAIRQVITTRKQAVGPGGVNSGPVQI VNNKFLAWSGVMEWQEPRPEPNSRSKRWLPSHVYVNQGEILRT EQWPRKLYMQLIPQQLLTTLVPLFRNSRLVQFHFTKDLETLKS LCRIMDNGFAGCVHFSYKASCEIRVLMLLYSSEKKIFIGLIPH DQGNFVNGIRRVIANQQQVLQRNLEQEQQQRGMGG
514	1253	320	964	GRPALGREAPPQAGLSSTPPPCSETCTMGPHSILRTVHCRPTK TPPEPSAEPHPLSLLTSSNTSLAGTSLGRDLTPGGGKPPSGQT PRNPESPRHRLGSPRGRRWLASPTPTGSGRSGPASRGQRRLSC AAQDPTSEGASVGAMEAGLGPPTAAPRGVVSEAAESLGGTLSW GAWGRPPAGPSGLAGRRSRREALRPDRKEASVMMAAVSAIQP
515	1254	704	107	PGVPTHGWPRSRVLTRVRGSRGSGKMAAAVVLAAGLRAARRAV AATGVRGGQVRGAAGVTDGNEVAKAQQATPGGAAPTIFSRILD KSLPADILYEDQQCLVFRDVAPQAPVHFLVIPKKPIPRISQAE EEDQQ/LTYVPPLSL*LLGHLLLVAKQTAKAEGLGDGYRLVIN DGKLGAQSVYHLHIHVLGGRQLQWPPG
516	1255	2299	924	VPNYLPSVSSAIGGEVPQRYVWRFCIGLHSAPRFLVAFAYWNH YLSCTSPCSCYRPLCRLNFGLNVVENLALLVLTYVSSSEDF/T WVPG*GRSGEVFPEGTGLPLPHSDLPTSWCGHSLQCGSQSSFP PAIHENAFIVFIASSLGHMLLTCILWRLTKKHTVSQE\DGLSL AGAPRQPRRKSRTSVLRIRVMVRWELSSNGNPGRGVLGLGLGL GNKLRVVGQNLGL*HCVWVVWETGE*KRWRLQMGIE*GVASRR Q*VRNSVRGLVCHNSSAPPMYMGFFSPTVFGGGVGG*LHVTFI LHPPEVEAAGIPLLLGPSLPQRQGREHIVVILAAPACAPFHDR *WEPREIRPSP*ELGLRGEPTLSYPASCRVIRQPIP*DRKSYS WKQRLFIINFISFFSALAVYFRHNMYCEAGVYTIFAILEYTVV LTNMAFHMTAWWDFGNKELLITSQPEEKRF
517	1256	3	254	IDLLEIRNGPRSHESFQEMDLNDDWKLSKDEVKAYLKKEFEKH GAVVNESHHDALVEDIFDKEDEDKDGFISAREFTYKHDEL
518	1257	2	611	PRVRGRVGKEGAAAKPRSLLRRFQLLSWSVCGGNKDPWVQELM SCLDLKECGHAYSGIVAHQKHLLPTSPPISQASEGASSDIHTP AQMLLSTLQSTQRPTLPVGSLSSDKELTRPNETTIHTAGHSLA AGPEAGENQKQPEKNAGPTARTSATVPVLCLLAIIFILTAALS YVLCKRRRGQSPQSSPDLPVHYIPVAPDSNT
519	1258	1002	418	LIISNFLKAKQKPGSTPNLQQKKSQARLAPDIVSASQYRKFDE FQTGILIYELLHQPNPFEVRAQLRERDYRQEDLPPLPALSLYS PGLQQLAHLLLEADPIKRIRIGEAKRVLQCLLWGPRRELVQQP GTSEEALCGTLHNWIDMKRALMMMKFAEKAVDRRRGVELEDWL CCQYLASAEPGALLQSLKLLQLL

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520	1259	2	2019	KRGLIVVMAHEMIGTQIVTERGVALLESGTEKVLLIDSRPFVE YNTSHILEAININCSKLMKRRLQQDKVLITELIQHSAKHKVDI DCSQKVVVYDQSSQDVASLSSDCFLTVLLGKLEKSFNSVHLLA GGFAEFSRCFPGLCEGKSTLVPTCISQPCLPVANIGPTRILPN LYLGCQRDVLNKELMQQNGIGYVLNASNTCPKPDFIPESHFLR VPVNDSFCEKILPWLDKSVDFIEKAKASNGCVLVHCLAGISRS ATIAIAYIMKRMDMSLDEAYRFVKEKRPTISPNFNFLGQLLDY EKKIKNQTGASGPKSKLKLLHLEKPNEPVPAVSEGGQKSETPL SPPCADSATSEAAGQRPVHPASVPSVPSVQPSLLEDSPLVQAL SGLHLSADRLEDSNKLKRSFSLDIKSVSYSASMAASLHGFSSS EDALEYYKPSTTLDGTNKLCQFSPVQEL/CGADSRNQS**GGS Q/PSPRSCRPPGLQTARASDCIRSEPAAVAPPRGPFYLHCIEV GAWRTITTPASFSAFPP\PAAPHEVCWPGP*GLA\PDILAPQT STPSLTSSWYFATESSHFYSASAIYGGSASYSAYSCSQLPTCG DQVYSVRRRQKPSDRADSRRSWHEESPFEKQFKRRSCQMEFGE SIMSENRSREELGKVGSQSSFSGSMEIIEVS
521	1260	20	803	ASSSKRVSRQKMLQLWKLVLLCGVLTGTSESLLDNLGNDLSNV VDKLEPVLHEGLETVDNTLKGILEKLKVDLGVLQKSSAWQLAK QKAQEAEKLLNNVISKLLPTNTDIFGLKISNSLILDVKAEPID DGKGLNLSFPVTANVTEAGPIIDQIIN\LRASLDLLTAVTIET DPQTHHPVAGLGECARDPTSISLCLLDKHSQIINKFVNSVINT LKSTVSSLLQKEICPLIRIFIHSLDVNVIQQVVDNPQHKTQLQ TLI
522	1261	1246	411	CSLRRPRSAAEPDADHVPLLGLLRLQLRAARQPGAMRPQGPAA SPQRLRGLLLLLLLQLPAPSSASEIPKGKQKAQLRQREVVDLY NGMCLQGPAGVPGRDGSPGANGIPGTPGIPGRDGFKGEKGECL RESFEESWTPNYKQCSWSSLNYGIDLGKIAECTFTKMRSNSAL RVLFSGSLRLKCRNACCQRWYFTFNGAECSGPLPIEAIIYLDQ GSPEMNSTINIHRTSSVEGLCEGIGAGLVDVAIWVGTCSDYPK GDASTGWNSVSRIIIEELPK
523	1262	2009	921	MHSAMLGTRVNLSVSDFWRVMMRVCWLVRQDSRHQRIRLPHLE AVVIGRGPETKITDKKCSRQQVQLKAECNKGYVKVKQVGVNPT SIDSVVIGKDQEVKLQPGQVLHMVNELYPYIVEFEEEAKNPGL ETHRKRKRSGNSDSIERDAAQEAEAGTGLEPGSNSGQCSVPLK KGKDAPIKKESLGHWSQGLKISMQDPKMQVYKDEQVVVIKDKY PKARYHWLVLPWTSISSLKAVAR\EHLELLKHMHTVGEKVIVD FAGSSKLRFRLGYHAIPSMSHVHLHVISQDFDSPCLKNKKHWN SFNTEYFLESQAVIEMVQEAGRVTVRDGMPELLKLPLRCHECQ QLLPSIPQLKEHLRKHWTQ

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524	1263	2067	198	DMSDTSESGAGLTRFQAEASEKDSSSMMQTLLTVTQNVEVPET PKASKALEVSEDVKVSKASGVSKATEVSKTPEAREAPATQASS TTQLTDTQVLAAENKSLAADTKKQNADPQAVTMPATETKKVSH VADTKVNTKAQETEAAPSQAPADEPEPESAAAQSQENQDTRPK VKAKKARKVKHLDGEEDGSSDQSQASGTTGGRRVSKALMASMA RRASRGPIAFWARRASRTRLACFGPGEPLLSPWRSP\KARRQR GFAVRVAKFQ\SSQEPEAPPPW\DVALLQGRAN\DLVKYLLAK DQTKIPIKRS\DMLKDIIKEYTDVYPEII\ERAGYSLE\KVFG IQLKEIDKNDHLYILLSTLEPTDAGILGTTKDSPKLGLLMVLL SIIF\MNGNRS\SEAVIWEVLR/RSLGLRLGIHHS\LLGDVK\ KLITDEV\VKQKYL\DYARVPHSNSP\EYEFFWG\LRSYYEDQ QR*KSFKFACK\VQK\KDPK\EWAAQSPPGKAR/ERMEAD\LK AAS*GSPWKPRLRAEIKARMGIGLGSENAAGPCNWDEADIGPW AKARIQAGAEAKAKAQESGSASTGASTSTNNSASASASTSGGF SAGASLTATLTFGLFAGLGGAGASTSGSSGACGFSYK
525	1264	1	1397	ARPPVCTGSTMSLTVVSMACVGFFLLQGAWPLMGGQDKPFLSA RPSTVVPRGGHVALQCHYRRGFNNFMLYKEDRSHVPIFHGRIF QESFIMGPVTPAHAGTYRCRGSRPHSLTGWSAPSNPLVIMVTG NHRKPSLLAHPGPLLKSGETVILQCWSDIMFEHFFLHKEGISK DPSRLVGQIHDGVSKANFSIGPMMLALAGTYRCYGSVTHTPYQ LSAPSDPLDIVVTGPYEKPSLSAQPGPKVQAGESVTLSCSSRS SYDMYHLSREGGAHERRLPAVRKVNRTFQADFPLGPATHGGTY RCFGSFRHSPYEWSDPSDPLLVSVTGNPSSSWPSPTEPSSKSG NLRHLHILIGTSVVKIPFTILLFFLLHRWCSNKK\NAAVMDQE PAGNR\VNSEDSDEQDHQEVSYP*LEHCVFTQRKITRPSQRPK TPPTDTSMYIELPNAEPRSKVVFCPRAPQSGLEGIF

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526	1265	6657	988	LHNLRERYFSGLIYTYSGLFCVVVNPYKHLPIYSEKIVDMYKG KKRHEMPPHIYAIADTAYRSMLQDREDQSILCTGESGAGKTEN TKKVIQYLAVVASSHKGKKDTSITGELEKQLLQANPILEAFGN AKTVKNDNSSRFGKFIRINFDVTGYIVGANIETYLLEKSRAIR QARDERTFHIFYYMIAGAKEKMRSDLLLEGFNNYTFLSNGFVP IPAAQDDEMFQETVEAMAIMGFSEEEQLSILKVVSSVLQLGNI VFKKERNTDQASMPDNTAAQKVCHLMGINVTDFTRSILTPRIK VGRDVVQKAQTKEQADFAVEALAKATYERLFRWILTRVNKALD KTHRQGASFLGILDIAGFEIFEVNSFEQLCINYTNEKLQQLFN HTMFIL\EQEEYQREGIEWNFIDFGLDLQPCIELIERPNNPPG VLALLDEECWFPKATDKSFVEKLCTEQGSHPKFQKPKQLKDKT EFSIIHYAGKVDYNASAWLTKNMDPLNDNVTSLLNASSDKFVA DLWKDVDRIVGLDQMAKMTESSLPSASKTKKGMFRTVGQLYKE QLGKLMTTLRNTTPNFVRCIIPNHEKRSGKLDAFLVLEQLRCN GVLEGIRICRQGFPNRIVFQEFRQRYEILAANAIPKGFMDGKQ ACILMIKALELDPNLYRIGQSKIFFRTGVLAHLEEERDLKITD VIMAFQAMCRGYLARKAFAKRQQQLTAMKVIQRNCAAYIKLRN WQWCRLFTKV*PLLQVTRQE*EMQAKEDELQKTKERQQKAENE LKELEQKHSQLTEEKNLLQEQLQAETELYAEAEEMRVRLAAKK QELEEILHEMEARLEEEEDRGQQLQAERKKMAQQMLDLEEQLE EEEAARQKLQLEKVTAEAKIKKLEDEILVMDDQNNKLSKERKL LEERISDLTTNLAEEEEKAKNLTKLKNKHESMISELEVRLKKE EKSRQELEKLKRKLEGDASDFHEQIADLQAQIAELKMQLAKKE EELQAALARLDDEIAQKNNALKKIRELEGHISDLQEDLDSERA ARNKAEKQKRDLGEELEALKTELEDTLDSTATQQELRAKREQE VTVLKR\ALNEETRSHEAQVQEMRQKHAQAVQSLTEQLEQ*K RAKANLDKNKQTLEKENTD\LAGELRVLGQA\KQEVEHRMKKL QAQVQELQSKCSDGERARAELNDKVHK\LQNEVESVTG\MLNE AEGKAIKLAKDVASLSSQL\QDTQELLQEESRQKLNVST\SLR \QLEEERNSLQDQLDEEMEAKQNLERHISTLNIQLSDSKKKLQ DFASTVEALEEGKKRFQKEIENLTQQYEEKAAAYDKLEKTKNR LQQELDDLVVDLDNQRQLVSNLEKKQRKFDQLLAEEKNISSKY ADERDRVEAEAREKETKALSL\ARALEEALEAKEELERTNKML KA\EMGRPGSASKD\DVGQELSHDL\EKSK\RALGDPRLEEMK T\QLEELGRTELASPRRDA\KLRLEVNMQAPSRASFER\DLQA RTEQNE\ESRR\HLQRQLHEYETELEDERKQRALAAAAKIKLG WDPVRTLDL*ADSAIKGRGGKAIKQLRKLQAQMKDFQRELEDA \RASRDEIF\ATA\KENEKKAKSLEA\DLMQLQE\DLAAAEEG RKQ\ADLE\KEELAEEL\ASSLSGRNALQDEKRRLEARIAQLE EELEEEQGNMEAMSDRVRKATQQAEQLSNELATERSTAQKNES ARQQLERQNKELRSKLHEMEGAVKSKFKSTIAALEAKIAQLEE QVEQEAREKQAATKSLKQKDKKLKEILLQVEDERKMAEQYKEQ AEKGNARVKQLKRQLEEAEEESQRINANRRKLQRELDEATESN EAMGREVNALKSKLRRGNETSFVPSRRSGGRRVIENADGSEEE TDTRDADFNGTKASE

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
527	1266	1	775	KLHFAKSLNSELSCSTREAMQDEDGYITLNIKTRKPALVSVGP ASSSWWRVMALILLILCVGMVVGLVALGIWSVMQRNYLQDENE NRTGTLQQLAKRFCQYVVKQSELKGTFKGHKCSPCDTNWRYYG DSCYGFFRHNLTWEESKQYCTDMNATLLKIDNRNIVEYIKAR\ THLIRWVGLSRQKSNEVWKWEDGSVISENMFEFLEDGKGNMNC AYFHNGKMHPTFCENKHYL\MCE\RKAGHDPRWTQLPLMPKRW TG
528	1267	1053	424	NQGLRDVGLCRTCLVNKIFASSILGKSHHHSLVSINQGHNAPW KAAGS\LPLKAAYC\QGFSPCDCLKYG\SWDEKDLMVPQPDTH KGSVLRWISKRGKPLAVEMEEGHCL\CLPLGTECLGVKP\IVH LFNSEMGEK\RPVAG\ARHVGSSAALLFFTPLRCLGGEKHKSG LRARPGIVPSLELNYDIDSFAHMFF/SVDLLLIITLLSYYIPF C
529	1268	1435	1560	MWWRLAPTQAIWRAAGCCMRFSRRRSTCCCLASCIFLLYKIVR GDQPAAKRRQRRRRAAPSAPPQAARLHPPPKLRRFDGVQDPAP YSWAINGKVFDVTQRPANFLRGPRGPETLSDWESQFTFKYHHV GKLLKEGEEPTVYSDEEEPKDESARKND*
530	1269	705	166	GPRMAKFLSQDQINEYKECFSLYDKQQRGKIKATDLMVAMRCL GASPTPGEVQRHLQTHGIDGNGELDFSTFLTIMHMQIKQEDPK KEILLAMLMVDKEKKGYVMASDLRSKLTSLGEKLTHKEV\DDL FRE\ADIEPNGKVKYDEFIHKI/TLLPGRDLLKEENGRASPGP ENLEQLIFL
531	1270	25	1396	ADPHTTVIRFFPAASATKRVLPPVLRVSSPRTWNPNVPESPRI PAPRLPKRMSGAPTAGAALMLCAATAVLLSAQGGPVQSKSPRF ASWDEMNVLAHGLLQLGQGLREHAERTRSQLSALERRLSACGS ACQGTEGSTDLPLAPESRVDPEVLHSLQTQLKAQNSRIQQLFH KVAQQQRHLEKQHLRIQHLQSQFGLLDHKHLDHEVAKPARRKR LPEMAQPVDPAHNVSRLHRLPRDCQELFQVGERQSGLFEIQPQ GSPPFLVNCKMTSDGGWTVIQRRHDGSVDFNRPWEAYKAGFGD PHGEFWLGLEKVHSITGDRNSRLAVQLRDWDGNAELLQFSVHL GGEDTAYSLQLTAPVAGQLGATTVPPSGLSVPFSTWDQDHDLR RDKNCAKSLSGGWWFGTCSHSNLNGQYFRSIPQQRQKLKKGIF WKTWRGRYYPLQATTMLIQPMAAEAAS
532	1271	1276	90	ALDFGDSCQWPRPQDTMKQLPVLEPGDKPRKATWYTLTVPGDS PCARVGHSCSYLPPVGNAKRGKVFIVGGANPNRSFSDVHTMDL GKHQWDLDTCKGLLPRYEHASFIPSCTPDRIWVFGGANQSGNR NCLQVLNPETRTWTTPEVTSPPPSPRTFHTSSAAIGNQLYVFG GGERGAQPVQDTKLHVFDANTLTWSQPETLGNPPSPRHGHVMV AAGTKLFIHGGLAGDRFYDDLHCIDISDMKWQKLNPTGAA\PA GCAS/HTPAVAMGK\HVYI\FGGMTPAGAPGTQCTQYHTEEQH WDPCLKF\DTPSYPPGTIGTHSHVVSFPW\PVTCASEKEDS\N SLTLNHEAEKEDSADKVMSHSGDSHEESQTATLLCLVFGGMNT EGEIYDDCIVTVVD

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
533	1272	1169	639	GFSIGKATDRMDAFRKAKNRAVHHLHYIERYEDHTIFHDISLR FKRTHIKMKKQPKGYGLRCHRAIITICRLIGIKDMYAKVSGSI NMLSLTQGLFRGLSRQETHQQLADKKGLHVVEIREECGPLPIV VASPRGPLRKDPEPEDEVPDVKLDWEDVKTAQGMKRSVWSNLK RAAT
534	1273	25	1396	ADPHTTVIRFFPAASATKRVLPPVLRVSSPRTWNPNVPESPRI PAPRLPKRMSGAPTAGAALMLCAATAVLLSAQGGFVQSKSPRF ASWDEMNVLAHGLLQLGQGLREHAERTRSQLSALERRLSACGS ACQGTEGSTDLPLAPESRVDPEVLHSLQTQLKAQNSRIQQLFH KVAQQQRHLEKQHLRIQHLQSQFGLLDHKHLDHEVAKPARRKR LPEMAQPVDPAHNVSRLHRLPRDCQELFQVGERQSGLFEIQPQ GSPPFLVNCKMTSDGGWTVIQRRHDGSVDFNRPWEAYKAGFGD PHGEFWLGLEKVHSITGDRNSRLAVQLRDWDGNAELLQFSVHL GGEDTAYSLQLTAPVAGQLGATTVPPSGLSVPFSTWDQDHDLR RDKNCAKSLSGGWWFGTCSHSNLNGQYFRSIPQQRQKLKKGIF WKTWRGRYYPLQATTMLIQPMAAEAAS
535	1274	23	1102	TLRSRPAGEAGYLGWDPEQAGEGSALSRPGAMAALMTPGTGAP PAPGDFSGEGSQGLPDPSPEPKQLPELIRMKRDGGRLSEADIR GFVAAVVNGSAQGAQIGAWGGLGVPDPDWEVSPRDFGSLGVRR CPTTSTGPRVPHRCGLPPSRVPPHTRG\MLMAIRLRGMDLEET SVLTQALAQSGQQLEWPEAWRQQLVDKHSTGGVGDKVSLVLAP ALAACGCKVINHLLSRREPIPHMQQPVHPQAAPNLKPGPKPPR PYQGFSPPCSPAQFSPPRSPAQRLGPLWLQTRPLGAGKRSTDG IQTPFPLGPQTAPPREELRTSLPLPQALFPQGQVPTSSPTDTS QPRKLPFHSLTSWAPL
536	1275	3	439	RALRELRERVTHGLAEAGRDREDVSTELYRALEAVRLQNSEGS CEPCPTSWLPFGGSCYYFSVPKTTWAEAQGHCADASAHLA/IV GGLGEQDFLSRDTSALEYWIGRRAVQHLRKVQGYSWVDGVPLS FR*/WEG/HPGETWGPQVRL
537	1276	1	564	RWPRSWPPRAGAARGAAEAAMVGALCGCWFRLGGARPLIPLGP TVVQTSMSRSQVALLGLSLLLMLLLYVGLPGPPEQTSCLWGDP NVTVLAGLTPGNSPIFYREVLPLNQAHRVEV\CCFMERPLTLT RGSSWAHCSYCHRGATGPWPLTFQVLGTRHLQRRQAQRQGGQR CWSGRCGTWRYRMPCW

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corre-sponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
538	1277	102	1549	QENQLEKKMKFLIFAFFGGVHLLSLCSGKAICKNGISKRTFEE IKEEIASCGDVAKAIINLAVYGKAQNRSYERLALLVDTVGPRL SGSKNLEKAIQIMYQNLQQDGLEKVHLEPVRIPHWERGEESAV MLEPRIHKIAILGLGSSIGTPPEGITAEVLVVTSFDELQRRAS EARGKIVVYNQPYINYSRTVQYRTQGAVEAAKVGALASLIRSV ASFSIYSPHTGIQEYQDGVPKIPTACITVEDAEMMSRMASHGI KIVIQLKMGAKTYPDTDSFNTVAEITGSKYPEQVVLVSGHLDS WDVGQGAMDDGGGAFISWEALSLIKDLGLRPKRTLRLVLWTAE EQGGVGAFQYYQLHKVNISNYSLVMESDAGTFLPTGLQFTGSE KARAIMEEVMSLLQPLNITQVLSHGEGTDINFWIQAGVPGASL LDDLYKYFFFHHSHGDTMTVHGIQTQMNV\AAAV\WAVVSYV\ VADMEEMLPRS
539	1278	2438	1148	TKPRKRRHQPASQRQRPWSSDSTGDLLARGKGRKEENKGSDRV SLAPPSLRRPMMCQSEARQGPELRAAKWLHFPQLALRRRLGQL SCMSRPALKLRSWPLTVLYYLLPFGALRPLSRVGWRPVSRVAL YKSVPTRLLSRAWGRLNQVELPHWLRRPVYSLYIWTFGVNMKE AAVEDLHHYRNLSEFFRRKLKPQARPVCGLHSVISPSDGRILN FGQVKNCEVEQVKGVTYSLESFLGPRMCTEDLPFPPAASCDSF KNQLVTREGNELYHCVIYLAPGDYHCFHSPTDWTVSHRRHFPG SLMSVNPGMARWIKELFCHNERVVLTGDWKHGFFSLTAVGAT\ NWGSIRIYFDRDLHTNSPRHSKGSYNDFSFVTHTNREGVPMRK GEHLGEFNLGSTIVLIFEAPKDFNFQLKTGQKI\RFGEALGSL
540	1279	3	1911	LPERAFGPRTPRAPRRRRRRLLLSPPPRPPPPLDREPRAPGPW LCPSRAGTAQDPARIRERRGRVAGGAAGPAMELRARGWWLLCA AAALVACARGDPASKSRSCGEVRQIYGAKGFSSS\DVPQAEIS GEHLRICPQGYTCCTSEMEENLANRSHAELETALRDSSRVLQA MLATQLRSFDDHFQHLLNDSERTLQATFPGAFGELYTQNARAF RDLYSELRLYYRGANLHLEETLAEFWARLLERLFKQLHPQLLL PDDYLDCLGKQAEALRPF\GEAP\RELRLRAT\RA\FVAAR\S FVQGLGVAS\DVVRKVAQVPLG\PEC\SRAVIEAGSYC/ALHC VGVPGARPCPDYCRNVLKGCLANQADLDAEWRNLLDSMVLITD KFWGTSGVESVIGSVHTWLAEAINALQDNRDTLTAKVIQGCGN PKVNPQGPGPEEKRRRGKLAPRERPPSGTLEKLVSEAKAQLRD VQDFWISLPGTLCSEKMALSTASDDRCWNGMARGRYLPEVMGD GLANQINNPEVEVDITKPDMTIRQQIMQLKIMTNRLRSAYNGN DVDFQDASDDGSGSGSGDGCLDDLCGRKVSRKSSSSRTPLTHA LPGLSEQEGQKTSAASCPQPPTFLLPLLLFLALTVARPRWR
541	1280	590	189	ATELTRAGMEASALTKSA\VTSVAKVVR\VASGSAVVLPLARI ATSCD*RVGGP/VQAVPMVL\SAMGLQLRAGIASSSIAAKMMS AAAIA\NGGGVSPGQPLWLLLQSLGATGL\SGLTKFILGSIGS AIA\AVIARFY

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
542	1281	41	1415	TNGRNLLHHWILGVCGMHPHHQETLKKNRVVLAKQLLLSELLE HLLEKDIITLEMRELIQAKVGSFSQNVELLNLLPKRGPQAFDA FCEALRETKQGHLEDMLLTTLSGLQHVLPPLSCDYDLSLPFPV CESCPLYKKLRLSTDTVEHSLDNKDGPVCLQVKPCTPEFYQTH FQLAYRLQSRPRGLALVLSNVHFTGEKELEFRSGGDVDHSTLV TLFKLLGYDVHVLCDQTAQEMQEKLQNFAQLPAHRVTDSCIVA LLSHGVEGAIYGVDGKLLQLQEVFQLFDNANCPSLQNKPKMFF IQACRGGAIGSLGHLLLFTAATASLAL\ETDRGVDQQDGKNHA GSPGCEESDAGKEKLPKMRLPTRSDMICGYACLKGTAAMRNTK RGSWYIEALAQVFSERACDMHVADMLVKVNALIKDREGYAPGT EFHRCKEMSEYCSTLCRHLYLFPGHPPT
543	1282	862	275	VRGKEVMAALCRTRAVAAESHFLRVFLFFRPFRGVGTESGSES GSSNAKEPKTRAGGFASALERHSELLQKVEPLQKGSPKNVESF ASMLRHSPLTQMGPAKDKLVIGRIFHIVENDL\YIDFGGKFHC VCRRPEVDGEKY\QKGTRVR\LRLLDLELTSRFLGATTD\TTV LEANAVLLGIQESKDSRSKEEHLEKYI

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544	1283	2	4503	IPGASPAPRRAAPLRLGLRLASGWARAPGGVSPVPGPGMGGDA PTMARAQALVLELTFQLCAPETETPEVGCTFEEGSDPAVPCEY SQAQYDDFQWEQVRIHPGTRAPADLPHGSYLMVNTSQHAPGQR AHVIFQSLSENDTHCVQFSYFLYSRDGHSPGTLGVYVRVNGGP LGSAVWNMTGSHGRQWHQAELAVSTFWPNEYQVLFEALISPDR RGYMGLDDILLLSYPCAKAPHFSRLGDVEVNAGQNASFQCMAA GRAAEAERFLLQRQSGALVPAAGVRHISHRRFLATFPLAAVSR AEQDLYRCVSQAPRGRGTSLNFAEFMV/KEPPTPIAPPQLLRA GPTYLIIQLNTNSIIGDGPIVRKEIEYRMARGPWAEVHAVSLQ TYKLWHLDPDTEYEISVLLTRPGDGGTGRPGPPLISRTKCAEP MRAPKGLAFAEIQARQLTLQWEPLGYNVTRCHTYTVSLCYHYT LGSSHNQTI\RECVKTEQGVSRYTMKNLLPYRNVHVRLVLTNP EGRKEGKEVTFQTDEDVPSGIAAESLTFTPLEDMIFLKWEEPQ EPNGLITQYEISYQSIESSDPAVNVPGPRRTISKLRNETYHVF SNLHPGTTYLFSVRARTGKGFGQAALTEITTNISAPSFDYADM PSPLGESENTITVLLRPAQGRGAPISVYQVIVEEEQGSRRLRR EPGGQDCFPVPLTFEAALARGLVDYFGAELAASSLPEAMPFTV GDNKTYRGFWNPPLEPRKAYLIYFQAASHLKGETRLNCIRIAR KAACKESKRPLEVSQRSEEMGLILGICAGGLAVLILLLGAIIV IIRKGRDHYAYSYYPKPVNMTKATVNYRQEKTHMMSAVDRSFT DQSTLQEDERLGLSFMDTHGYSTRGDQRSGGVTEASSLLGGSP RRPCGRKGSPYHTGQLHPAVRVADLLQHINQMKTAEGYGFKQE YESFFEGWDATKKKDKVKGSRQEPMPAYDRHRVKLHPMLGDPN ADYINANYIDIRINREGYHRSNHFIATQGPKPEMVYDFWRMVW QEHCSSIVMITKLVEVGRVKCSRYWPEDSDTYGDIKIMLVKTE TLAEYVVRTFALERRGYSARHEVRQFHFTAWPEHGVPYHATGL LAFIRRVKASTPPDAGPIVIHCSAGTGRTGCYIVLDVMLDMAE CEGVVDIYNCVKTLCSRRVNMIQTEEQYIFIHDAILEACLCGE TTIPVSEFKATYKEMIRIDPQSNSSQLREEFQTLNSVTPPLDV EECSIALLPRNRDKNRSMDVLPPDRCLPFLISTDGDSNNYINA ALTDSYTRSAAFIVTLHPLQSTTPDFWGLVYDYGCTSIVMLNQ LNQSNSAWPCLQYWPEPGRQQYGLMEVEFMSGTADEDLVARVF RVQNISRLQEGHLLVRHFQFLRWSAYRDTPDSKKAFLHLLAEG DKWQAESGDGRTIVHCLNGGGRSGTFCA\CATVLEMIRCHNLV DVFFAAKTLRNYKPNMVETMDQYHFCYDVALEYLEGLESR

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
545	1284	2443	1152	TKPRKRRHQPASQRQRPWSSDSTGDLLARGKGRKEENKGSDRV SLAPPSLRRPMMCQSEARQGPELRAAKWLHFPQLALRRRLGQL SCMSRPALKLRSWPLTVLYYLLPFGALRPLSRVGWRPVSRVAL YKSVPTRLLSRAWGRLNQVELPHWLRRPVYSLYIWTFGVNMKE AAVEDLHHYRNLSEFFRRKLKPQARPVCGLHSVISPSDGRILN FGQVKNCEVEQVKGVTYSLESFLGPRMCTEDLPFPPAASCDSF KNQLVTREGNELYHCVIYLAPGDYHCFHSPTDWTVSHRRHFPG SLMSVNPGMARWIKELFCHNERVVLTGDWKHGFFSLTAVGAT\ NWGSIRIYFDRDLHTNSPRHSKGSYNDFSFVTHTNREGVPMAL RGEHLG/QSFNLGSTIVLIFEAPKDFNFQLKTGQKIRFGEALG SL
546	1285	185	3057	AELGLFGSLRFSSLLHFPPRPRSPASACGPGEGRMERGLPLLC AVLALVLAPAGAFRNDKCGDTIKIESPGYLTSPGYPHSYHPSE KCEWLIQAPDPYQRIMINFNPHFDLEDRDCKYDYVEVFDGENE NGHFRGKFCGKIAPPPVVSSGPFLFIKFVSDYETHGAGFSIRY EIFKRGPECSQNYTTPSGVIKSPGFPEKYPNSLECTYI\VFAP KMSEIIL\DFESFDLEPDSNPPGGMFCRYDRLEIWDGFPDVGP HIGRYCGQKTPGRIRSSSGILSMVFYTDSAIAKEGFSANYSVL QSSVSEDFKCMEALGMESGEIHSDQITASSQYSTNWSAERSRL NYPENGWTPGEDSYREWIQVDLGLLRFVTAVGTQGAISKETKK KYYVKTYKIDVSSNGEDWITIKEGNKPVLFQGNTNPTDVVVAV FPKPLITRFVRIKPATWETGISMRFEVYGCKITDYPCSGMLGM VSGLISDSQITSSNQGDRNWMPENIRLVTSRSGWALPPAPHSY INEWLQIDLGEEKIVRGIIIQGGKHRENKVFMRKFKIGYSNNG SDWKMIMDDSKRKAKSFEGNNNYDTPELRTFPALSTRFIRIYP ERATHGGLGLRMELLGCEVEAPTAGPTTPNGNLVDECDDDQAN CHSGTGDDFQLTGGTTVLATEKPTVIDSTIQSEFPTYGFNCEF GWGSHKTFCHWEHDNHVQLKWSVLTSKTGPIQDHTGDGNFIYS QADENQKGKVARLVSPVVYSQNSAHCMTFWYHMSGSHVGTLRV KLRYQKPEEYDQLVWMAIGHQGDHWKEGRVLLHKSLKLYQVIF EGEIGKGNLGGIAVDDISINNHISQEDCAKPADLDKKNPEIKI DETGSTPGYEGEGEGDKNISRKPGNVLKTLEPILITIIAMSAL GVLLGAVCGVVLYCACWHNGMSERNLSALENYNFELVDGVKLK KDKLNTQSTYSEA
547	1286	3	521	HEGSALTWASHYQERLNSEQSCLNEWTAMADLESLRPPSAEPG GSVCGGEGLGGGEGRIMQWGAWWRGERAP*LRGSAPRSSEQEQ MEQAIRAELWKVLDVSDLESVTSKEIRQALELRLGLPLQ/PVP *LHRQPDAAAGGTAGPSLPHLPPPLPGLRVERSKPGGAAEEQV GL
548	1287	1742	1200	MAALDLRAELDSLVLQLLGDLEELEGKRTVLNARVEEGWLSLA KARYAMGAKSVGPLQYASHMEPQVCLHASEAQEGLQKFKVVRA GVHAPEEVGPREAGLRRRKGPTKTPEPESSEAPQDPLNWFGIL VPHSLRQAQASFRDGLQLAADIASLQNRIDWGRSQLRGLQEKL KQLEPGAA*

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SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
549	1288	1	649	HSDVGAATAVLPLLTAVLGVTVVTRRDTEGPGRAALVHLTGSP RQKVGTSGREGLPGLGASCAESELERETQEPRSRGRCIFGAAR WRQVPLASPQRPFLLSPGPRLHRMGLPVSWAPPALWVLGCCAL LLSLWALCTACRRPEDAVAPRKRARRQRARLQGSATAAEAVSA KLSRGPGWGPQGTDQPSSPPVPTEADPPLLPQQVGHQTARAAP G
550	1289	433	632	LTGPGQRLAGTTEGPRRCRGSSQAPTPTWKLVDTRLCAAAPWL ASRAPGHYSQMLLVN*PCRKDWLVSKWMRTPVCGQSPAMTDRP RSEAGRDHRRAKALPGLIPGSNPNLEACGHQALCSSSVASVQG PWPLLPNASSPPTPGQPQP
551	1290	102	612	KHRLCSLEQLMTLISAAREYEIEFIYAISPGLDITFSNPKEVS TLKRKLDQVSQFGCRSFALLFDDIDHNMCAADKEVFSSFAHAQ VSITNEIYQYLGEPETFLFCPT/EYCI*WLYI*LVFLEYITYK GPWAPFSLHFPPPLVCKSRNLFLEDIFQDPKLEKF*ELINDN
552	1291	269	565	TSALTQGLERIPDQLGYLVLSEGAVLASSGDLENDEQAASAIS ELVSTACGFRLHRGMNVPFKRLSVVFGEHTLLVTVSGQRVFVV KRQNRGREPIDV
553	1292	660	233	AKRAERTSRLQGLQHPSPPYPPATLGVTPGQDRTLQLQHQCPA GRKSRKKKSKATQLSPEDRVEDALPPSKAPSRTRRAKRDLPKR TATQRPEGTSLQQDPEAPTVPKKGRRKGRQAASGHCRPRKVKA DIPSLEPEGTSAS
554	1293	590	323	RKSSWLGAVAHACNPSSLGGPGRQITRSGVRDQPGQYGETPSL LKIQTLAGRGGACL*SHILRRLRQKNRLNLGGRGCSELRSRHC APA
555	1294	1	242	AWNSARGAVSPLWVPGCFLTLSVTWIGAAPLILSRIVGGWECE KHSQPWQVLVASRGRAVCGGVLVHPQWVLTAAHCIRK
556	1295	1074	230	AEMADDLGDEWWENQPTGAGSSPEASDGEGEGDTEVMQQETVP VPVPSEKTKQPKECFLIQPKERKENTTKTRKRRKKKITDVLAK SEPKPGLPEDLQKLMKDYYSSRRLVIELEELNLPDSCFLKAND LTHSLSSYLKEICPKWVKLRKNHSEKKSVLMLIICSSAVRALE LIRSMTAFRGDGKVIKLFAKHIKVQAQVKLLEKRVVHLGVGTP GRIKELVKQGGLNLSPLKFLVFDWNWRDQKLRRMMDIPEIRKE VFELLEMGVLSLCKSESLKLGLF
557	1296	929	289	RPGTAIWVVECEHGRPIAESEGQEGRGHSPPGPCSVAGFLRGR LGRNLEIMGSTWGSPGWVRLALCLTGLVLSLYALHVKAARARD RDYRALCDVGTAISCSRVFSSRWGRGFGLVEHVLGQDSILNQS NSIFGCIFYTLQLLLGCLRTRWASVLMLLSSLVSLAGSVYLAW ILFFVLYDFCIVCITTYAINVSLMWLSFRKVQEPQGKAKRH

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
558	1297	2	1063	ESPAPPAFRPAMAAVALMPPPLLLLLLLLASPPAASAPSARDPF APQLGDTQNCQLRCRDRDLGPQPSQAGLEGASESPYDRAVLIS ACERGCRLFSICRFVARSSKPNATQTECEAACVEAYVKEAEQQ ACSHGCWSQPAEPEPEQKRKVLEAPSGALSLLDLFSTLCNDLV NSAQGFVSSTWTYYLQTDNGKVVVFQTQPIVESLGFQGGRLQR VEVTWRGSHPEALEVHVDPVGPLDKVRKAKIRVKTSSKAKVES EEPQDNDFLSCMSRRSGLPRWILACCLFLSVLVMLWLSCSTLV TAPGQHLKFQPLTLEQHKGFMMEPDWPLYPPPSHACEDSLPPY KLKLDLTKL
559	1298	2	485	FPELGTSLSAMRFLAATFLLLALSTAAQAEPVQFKDCGSVDGV IKEVNVSPCPTQPCQLSKGQSYSVNVTFTSNIQSKSSKAVVHG ILMGVPVPFPIPEPDGCKSGINCPIQKDKTYSYLNKLPVKSEY PSIKLVVEWQLQDDKNQSLFCWEIPVQIVSHL
560	1299	1304	919	APETFRCVWRLQGLTFIAFTELQAKVIDTQQKVKLADIQIEQL NRTKKHAHLTDTEIMTLVDETNMYEGVGRMFILQSKEAIHSQL LEKQKIAEEKIKELEQKKSYLERSVKEAEDNIREMLMARRAQ
561	1300	3	799	HSLLLGTRVRDASSKIQGEYTLTLRKGGNNKLSRVFHRDGHYG FSEPLTFCSVVDLINHYRHESLAQYNAKLDTRLLYPVSKYQQV RAGLGAREGSTWLAPGLSFLGRPDQAMHLPSFRHVSP\DQIVK EDSVEAVGAQLKVYHQQYQDKSREYDQLYEEYTRTSQELQMKR TAIEAFNETIKIFEEQGQTQEKCSKEYLERFRREGN/QTKEMQ RILLNSERLKSRIA\EIHESPHRSWEQQLLVPRASDNKRD/ID KPH*TSLKPDL
562	1301	1772	301	AAAAAGRGRSSGRRRRRRPGALFASLGVLLGPRPPPGIPRTRA CSMGGVGEPGPREGPAQPGAPLPTFCWEQIRAHDQPGDKWLVI ERRVYDISRWAQRHPGGSRLIGHHGAEDATDAFRAFHQDLNFV RKFLQPLLIGELAPEEPSQDGPLNAQLVEDFRALHQAAEDMKL FDASPTFFAFLLGHILAMEVLAWLLIYLLGPGWVPSALAAFIL AISQAQSWCLQHDLGHASIFKKSWWNHVAQKFVMGQLKGFSAH WWNFRHFQHHAKPNIFHKDPDVTVAPVFLLGESSVEYGKKKRR YLPYNQQHLYFFLIGPPLLTLVNFEVENLAYMLVCMQWADLLW AASFYARFFLSYLPFYGVPGVLLFFVAVRVLESHWFVWITQMN HIPKEIGHEKHRDWVSSQLAATCNVEPSLFTNWFSGHLNFQIE HHLFPRMPRHNYSRVAPLVKSLCAKHGLSYEVKPFLTALVDIV RSLKKSGDIWLDAYLHQ
563	1302	424	93	KSRATRLRESAEMTGFLLPPASRGTRRSCSRSRKRQTRRRRNP SSFVASCPTLLPFACVPGASPTTLAFPPVVLTGPSTDGIPFAL SLQRVPFVLPSPQVASLPLGHSRG
564	1303	1	414	IQYRSDLELHSITMKKSGVLFLLGIILLVLIGVQGTPVVRKGR CSCISTNQGTIHLQSLKDLKQFAPSPSCEKIEIIATLKNGVQT CLNPDSADVKELIKKWEKQVSQKKKQKNGKKHQKKKVLKVRKS QRSRQKKTT

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E=Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
565	1304	7	3007	IPGSTISCRGCCGKWPVQEADPPRAALRGRFPALLTRHCPSPR AEKEKRSLRRCGCRPLLVELAGPAGQAVEVLPHFESLGKQEKI PNKMSAFRNHCPHLDSVGEITKEDLIQKSLGTCQDCKVQGPNL WACLENRCSYVGCGESQVDHSTIHSQETKHYLTVNLTTLRVWC YACSKEVFLDRKLGTQPSLPHVRQPHQIQENSVQDFKIPSNTT LKTPLVAVFDDLDIEADEEDELRARGLTGLKNIGNTCYMNAAL QALSNCPPLTQFFLDCGGLARTDKKPAICKSYLKLMTELWYKS RPGSVVPTTLFQGIKTVNPTFRGYSQQDAQEFLRCLMDLLHEE LKEQVMEVEEDPQTITTEETMEEDKSQSDVDFQSCESCSNSDR AENENGSRCFSEDNNETTMLIQDDENNSEMSKDWQKEKMCNKI NKVNSEGEFDKDRDSISETVDLNNQETVKVQIHSRASEYITDV HSNDLSTPQILPSNEGVNPRLSASPPKSGNLWPGLAPPHKKAQ SASPKRKKQHKKYRSVISDIFDGTIISSVQCLTCDRVSVTLET FQDLSLPIPGKEDLAKLHSSSHPTSIVKAGSCGEAYAPQGWIA FFMEYVKRFVVSCVPSWFWGPVVTLQDCLAAFFARDELKGDNM YSCEKCKKLRNGVKFCKVQNFPEILCIHLKRFRHELMFSTKIS THVSFPLEGLDLQPFLAKDSPAQIVTYDLLSVICHHGTASSGH YIAYCRNNLNNLWYEFDDQSVTEVSESTVQNAEAYVLFYRKSS EEAQKERRRISNLLNIMEPSLLQFYISRQWLNKFKTFAEPGPI SNNDFLCIHGGVPPRKAGYIEDLVLMLPQNIWDNLYSRYGGGP AVNHLYICHTCQIEAEKIEKRRKTELEIFIRLNRAFQKEDSPA TFYCISMQWFREWESFVKGKDGDPPGPIDNTKIAVTKCGNVML RQGADSGQISEETWNFLQSIYGGGPEVILRPPVVHVDPDILQA EEKIEVETRSL
566	1305	28	450	SPSAAGGLAWVSLALGSGSRGRDHSGSGVGTAMAGALVRKAAD YVRSKDFRDYLMSTHFWGPVANWGLPIAAINDMKKSPEIISGR MTFALCCYSLTFMRFAYKVQPRNWLLFACHATNEVAQLIQGGR LIKHEMTKTASA
567	1306	133	1292	LGSRQAAGTMRGQRSLLLGPARLCLRLLLLLGYRRRCPPLLRG LVQRWRYGKVCLRSLLYNSFGGSDTAVDAAFEPVYWLVDNVIR WFGVVFVVLVIVLTGSIVAIAYLCVLPLILRTYSVPRLCWHFF YSHWNLILIVFHYYQAITTPPGYPPQGRNDIATVSICKKCIYP KPARTHHCSICNRCVLKMDHHCPWLNNCVGHYNHRYFFSFCFF MTLGCVYCSYGSWDLFREAYAAIEKMKQLDKNKLQAVANQTYH QTPPPTFSFRERMTHKSLVYLWFLCSSVALALGALTVWHAVLI SRGETSIERHINKKERRRLQAKGRVFRNPYNYGCLDNWKVFLG VDTGRHWLTRVLLPSSHLPHGNGMSWEPPPWVTAHSASVMAV
568	1307	66	962	ATRRRAAEAGMAAVLQRVERLSNRVVRVLGCNPGPMTLQGTNT YLVGTGPRRILIDTGEPAIPEYISCLKQALTEFNTAIQEIVVT HWHRDHSGGIGDICKSINNDTTYCIKKLPRNPQREEIIGNGEQ QYVYLKDGDVIKTEGATLRVLYTPGHTDDHMALLLEEENAIFS GDCILGEGTTVFEDLYDYMNSLKELLKIKADIIYPGHGPVIHN AEAKIQQYISHRNIREQQILTLFRENFEKSFTVMELVKIIYKN TPENLHEMAKHNLLLHLKKLEKEGKIFSNTDPDKKWKAHL

SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A=Alanine, C=Cysteine, D=Aspartic Acid, E= Glutamic Acid, F=Phenylalanine, G=Glycine, H=Histidine, I=Isoleucine, K=Lysine, L=Leucine, M=Methionine, N=Asparagine, P=Proline, Q=Glutamine, R=Arginine, S=Serine, T=Threonine, V=Valine, W=Tryptophan, Y=Tyrosine, X=Unknown, *=Stop Codon, /=possible nucleotide deletion, \=possible nucleotide insertion)
569	1308	96	1017	ELHRAGQVAGGARRSRRESMELERIVSAALLAFVQTHLPEADL SGLDEVIFSYVLGVLEDLGPSGPSEENFDMEAFTEMMEAYVPG FAHIPRGTIGDMMQKLSGQLSDARNKENLQPQSSGVQGQVPIS PEPLQRPEMLKEETRSSAAAAADTQDEATGAEEELLPGVDVLL EVFPTCSVEQAQWVLAKARGDLEEAVQMLVEGKEEGPAAWEGP NQDLPRRLRGPQKDELKSFILQKYMMVDSAEDQKIHRPMAPKE APKKLIRYIDNQVVSTKGERFKDVRNPEAEEMKATYINLKPAR KYRFH
570	1309	3	526	FITGKGIVAILRCLQFNETLTELRFHNQRHMLGHHAEMEIARL LKANNTLLKMGYHFELPGPRMVVTNLLTRNQDKQRQKRQEEQK QQQLKEQKKLIAMLENGLGLPPGMWELLGGPKPDSRMQEFFQP PPPRPPNPQNVPFSQRSEMMKKPSQAPKYRTDPDSFRVVKLKR IQ
571	1310	3	1858	GGRAGTQCCWRAGARLRGISPSPALPEAPGLCRVRAGLGAGAL GRSPAGRRRRGPRVSSSPAPHPRRVLCRCLLFLFFSCHDRRGD SQPYQALKYSSKSHPSSGDHRHEKMRDAGDPSPPNKMLRRSDS PENKYSDSTGHSKAKNVHTHRVRERDGGTSYSPQENSHNHSAL HSSNFTFFLIPSN*PQGKTFRIAPYDS\ADDW/SLEHISSSGE KYYYNCRTEVSQWGKTPKSGLERGQRQKEANKMAVNSFPKDRD YRREVMQATATSGFASGKSTSGDKPVSHSCTTPSTSSASGLNP TSAPPTSASA\VPVSP\VPQ\SPIPPLLQDPNLLRQLL\PALE ATLQLNNSNVDI\SIINEVLTGDVTQASLQTIIHKCLTAGPSV FKITSLISQAAQLSTQAQASNQSPMSLTSDASSPR\SYVSPRN KAHLKLNTVPIQTFGFSTPPVSSQPKVSTPVVKQGPVSQSATQ QPVTADKQQGHEPVSPRSLQRSSSQRSPSPGPNHTSNSSNASN ATVVPQNSSARSTCSLTPALAAHFSENLIKHVQGWPADHAEKQ ASRLREEAHNMGTIHMSEICTELKNLRSLVRVCEIQATLREQR ILFLRQQIKELEKLKNQNSFMV
572	1311	2	1165	VAPECRGAYPFRAMMPGTALKAVLLAVLLVGLQTATGRLLSGQ PVCRGGTQRPCYKVIYFHDTSRRLNFEEAKEACRRDGGQLVSI ESEDEQKLIEKFIENLLPSDGDFWIGLRRREEKQSNSTACQDL YAWTDGSISQFRNWYVDEPSCGSEVCVVMYHQPSAPAGIGGPY MFQWNDDRCNMKNNFICKYSDEKPAVPSREAEGEETELTTPVL PEETQEEDAKKTFKESREAALNLAYILIPSIPLLLLLVVTTVV CWVWICRKRKREQPDPSTKKQHTIWPSPHQGNSPDLEVYNVIR KQSEADLAETRPDLKNISFRVCSGEATPDDMSCDYDNMAVNPS ESGFVTLVSVESGFVTNDIYEFSPDQMGRSKESGWVENEIYGY

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SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
573	1312	3	1416	TEWGLSGSCPGCSPLEPGSRGRGAAAWRILRCRRLPEPSPFLT QPNLAQSQPPAPVPVTDPSVTMHPAVFLSLPDLRCSLLLLVTW VFTPVTTEITSLDTENIDEILNNADVALVNFYADWCRFSQMLH PIFEEASDVIKEEFPNENQVVFARVDCDQHSDIAQRYRISKYP TLKLFRNGMMMKREYRGQRSVKALADYIRQQKSDPIQEIRDLA EITTLDRSKRNIIGYFEQKDSDNYRVFERVANILHDDCAFLSA FGDVSKPERYSGDNIIYKPPGHSAPDMVYLGAMTNFDVTYNWI QDKCVPLVREITFENGEELTEEGLPFLILFHMKEDTESLEIFQ NEVARQLISEKGTINFLHADCDKFRHPLLHIQKTPADCPVIAI DSFRHMYVFGDFKDVLIPGKLKQFVFDLHSGKLHREFHHGPDP TDTAPGEQAQDVASSPPESSFQKLAPSEYRYTLLRDRDEL
574	1313	928	142	LTPSVGPVFPGRPTRPLASPFPVPLHRCSAGSQPPGPVPEGLI RIYSMRFCPYSHRTRLVLKAKDIRHEVVNINLRNKPEWYYTKH PFGHIPVLETSQCQLIYESVIACEYLDDAYPGRKLFPYDPYER ARQKMLLELFCKVPHLTKECLVALRCGRECTNLKAALRQEFSN LEEILEYQNTTFFGGTCISMIDYLLWPWFERLDVYGILDCVSH TPALRLWISAMKWDPTVCALLMDKSIFQGFLNLYFQNNPNAFD FGLC
575	1314	884	363	NTATNMTQPNAGTRKYSVPAISVHTSSSSFAYDREFLRTLPGF LIVAEIVLGLLVWTLIAGTEYFRVPAFGWVMFVAVFYWVLTVF FLIIYITMTYTRIPQVPWTTVGLCFNGSAFVLYLSAAVVDASS VSPERDSHNFNSWAASSFFAFLVTICYAGNTYFSFIAWRSRTI Q
576	1315	165	944	GLRDPFRRKRRLKPQVKMSNYVNDMWPGSPQEKDSPSTSRSGG SSRLSSRSRSRSFSRSSRSHSRVSSRFSSRSRRSKSRSRSRRR HQRKYRRYSRSYSRSRSRSRSRRYRERRYGFTRRYYRSPSRYR SRSRSRSRSRGRSYCGRAYAIARGQRYYGFGRTVYPEEHSRWR DRSRTRSRSRTPFRLSEKDRMELLEIAKTNAAKALGTTNIDLP ASLRTVPSAKETSRGIGVSSNGAKPEVSILGLSEQNFQKANCQ I

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577	1316	265	2300	AEGSTMDLTKMGMIQLQNPNHPTGLLCKANQMRLAGTLCDVVI MVDSQEFHAHRTVLACTSKMFEILFHRNSQHYTLDFLSPKTFQ QILEYAYTATLQAKAEDLDDLLYAAEILEIEYLEEQCLKMLET IQASDDNDTEATMADGGAEEKKDRKARYLKNIFISKHSSEESG YASVAGQSLPGPMVDQSPSVSTSFGLSAMSPTKAAVDSLMTIG QSLLQGTLQPPAGPEEPTLAGGGRHPGVAEVKTEMMQVDEVPS QDSPGAAESSISGGMGDKVEERGKEGPGTPTRSSVITSARELH YGREESAEQVPPPAEAGQAPTGRPEHPAPPPEKHLGIYSVLPN HKADAVLSMPSSVTSGLHVQPALAVSMDFSTYGGLLPQGFIQR ELFSKLGELAVGMKSESRTIGEQCSVCGVELPDNEAVEQHRKL HSGMKTYGCELCGKRFLDSLRLRMHLLAHSAGAKAFVCDQCGA QFSKEDALETHRQTHTGTDMAVFCLLCGKRFQAQSALQQHMEV HAGVRSYICSECNRTFPSHTALKRHLRSHTGDHPYECEFCGSC FRDESTLKSHKRIHTGEKPYECNGCGKKFSLKHQLETHYRVHT GEKPFECKLCHQRSRDYSAMIKHLRTHNGASPYQCTICTEYCP SLSSMQKHMKGHKPEEIPPDWRIEKTYLYLCYV
578	1317	686	908	IWEAPTLIFTLAGGRALGHPPMQKGSQGCALPHPLPGASLPAQ PGPADHRGWECRIGGEASVFTHLFCLPHSPT
579	1318	150	1204	ASGSPAPSSSSAMAAACGPGAAGYCLLLGLHLFLLTAGPALGW NDPDRMLLRDVKALTLHYDRYTTSRRLDPIPQLKCVGGTAGCD SYTPKVIQCQNKGWDGYDVQWECKTDLDIAYKFGKTVVSCEGY ESSEDQYVLRGSCGLEYNLDYTELGLQKLKESGKQHGFASFSD YYYKWSSADSCNMSGLITIVVLLGIAFVVYKLFLSDGQYSPPP YSEYPPFSHRYQRFTNSAGPPPPGFKSEFTGPQNTGHDATSGF GSAFTGQQGYENSGPGFWTGLGTGGILGYLFGSNRAATPFSDS WYYPSYPPSYPGTWNRAYSPLHGGSGSYSVCSNSDTKTRTASG YGGTRRR
580	1319	1208	276	GRCGAMAAGLARLLLLLGLSAGGPAPAGAAKMKVVEEPNAFGV NNPFLPQASRLQAKRDPSPVSGPVHLFRLSGKCFSLVESTYKY EFCPFHNVTQHEQTFRWNAYSGILGIWHEWEIANNTFTGMWMR DGDACRSRSRQSKVELACGKSNRLAHVSEPSTCVYALTFETPL VCHPHALLVYPTLPEALQRQWDQVEQDLADELITPQGHEKLLR TLFEDAGYLKTPEENEPTQLEGGPDSLGFETLENCRKAHKELS KEIKRLKGLLTQHGIPYTRPTETSNLEHLGHETPRAKSPEQLR GDPGLRGSL
581	1320	1074	132	NSFWSVLFLVQEETEVARCNAQHRLRQSRDSKPDPSFRSQPID SSISFAGSDIQPLFSFASVDGTQVGEAEEWAGPWAEATLLPGP GNRWPPRAGLSGNWLEEDGDWPSLPEVVGFVSERELFRDALGA GCRILLICEMQLTHQLDLFPECRVTLLLFKDVKNAGDLRRKAM EGTIDGSLINPTVIVDPFQILVAANKAVHLYKLGKMKTRTLST EIIFNLSPNNNISEALKKFGISANDTSILIVYIEEGEKQINQE YLISQVEGHQVSLKNLPEIMNITEVKKIYKLSSQEESIGTLLD AIICRMSTKDVL

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582	1321	5021	7694	QRSWAGPGAGPEAGTRPPARGRRRQPGNVDPRRRAPQLRSQMQ VAMARATTATGNRLWPGLLIMLGSLCHRGSPCGLSTHIEIGHR ALEFLQLHNGRVNYRELLLEHQDAYQAGIVFPDCFYPSICKGG KFHDVSESTHWTPFLNASVHYIRENYPLPWEKDTEKLVAFLFG ITSHMAADVSWHSLGLEQGFLRTMGAIDFHGSYSEAHSAGDFG GDVLSQFEFNFNYLARRWYVPVKDLLGIYEKLYGRKVITENVI VDCSHIQFLEMYGEMLAVSKLYPTYSTKSPFLVEQFQEYFLGG LDDMAFWSTNIYHLTIFMLENGTSDCNLPENPLFIACGGQQNH TQGSKMQKNDFHRNLTTSLTESVDRNINYTERGVFFSVNSWTP DSMSFIYKALERNIRTMFIGGSQLSQKHVSSPLASYFLSFPYA RLGWAMTSADLNQDGHGDLVVGAPGYSRPGHIHIGRVYLIYGN DLGLPPVDLDLDKEAHRILEGFQPSGRFGSALAVLDFNVDGVP DLAVGAPSVGSEQLTYKGAVYVYFGSKQGGMSSSPNITISCQD IYCNLGWTLLAADVNGDSEPDLVIGSPFAPGGGKQKGIVAAFY SGPSLSDKEKLNVEAANWTVRGEEDFSWFGYSLHGVTVDNRTL LLVGSPTWKNASRLGHLLHIRDEKKSLGRVYGYFPPNGQSWFT ISGDKAMGKLGTSLSSGHVLMNGTLKQVLLVGAPTYDDVSKVA FLTVTLHQGGATRMYALTSDAQPLLLSTFSGDRRFSRFGGVLH LSDLDDDGLDEIIMAAPLRIADVTSGLIGGEDGRVYVYNGKET TLGDMTGKCKSWITPCPEEKAQYVLISPEASSRFGSSLITVRS KAKNQVVIAAGRSSLGARLSGALHVYSLGSD
583	1322	1	357	SLRNSARGLKMAASAARGAAALRRSINQPVAFVRRIPWTAASS QLKEHFAQFGHVRRCILPFDKETGFHRGLGWVQFSSEEGLRNA LQQENHIIDGVKVQVHTRRPKLPQTSDDEKKDF
584	1323	1205	433	GSSNIHSASTHGFCHWFSSPSTLKRQKQAIRFQKIRRQMEAPG APPRTLTWEAMEQIRYLHEEFPESWSVPRLAEGFDVSTDVIRR VLKSKFLPTLEQKLKQDQKVLKKAGLAHSLQHLRGSGNTSKLL PAGHSVSGSLLMPGHEASSKDPNHSTALKVIESDTHRTNTPRR RKGRNKEIQDLEESFVPVAAPLGHPRELQKYSSDSESPRGTGS GALPSGQKLEELKAEEPDNFSSKVVQRGREFFDSNGNFLYRI
585	1324	134	954	ETRVKTSLELLRTQLEPTGTVGNTIMTSQPVPNETIIVLPSNV INFSQAEKPEPTNQGQDSLKKHLHAEIKVIGTIQILCGMMVLS LGIILASASFSPNFTQVTSTLLNSAYPFIGPFFFIISGSLSIA TEKRLTKLLVHSSLVGSILSALSALVGFIILSVKQATLNPASL QCELDKNNIPTRSYVSYFYHDSLYTTDCYTAKASLAGTLSLML ICTLLEFCLAVLTAVLRWKQAYSDFPGSVLFLPHSYIGNSGMS SKMTHDCGYEELLTS

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586	1325	106	1537	EMVGAMWKVIVSLVLLMPGPCDGLFRSLYRSVSMPPKGDSGQP LFLTPYIEAGKIQKGRELSLVGPFPGLNMKSYAGFLTVNKTYN SNLFFWFFPAQIQPEDAPVVLWLQGGPGGSSMFGLFVEHGPYV VTSNMTLRDRDFPWTTTLSMLYIDNPVGTGFSFTDDTHGYAVN EDDVARDLYSALIQFFQIFPEYKNNDFYVTGESYAGKYVPAIA HLIHSLNPVREVKINLNGIAIGDGYSDPESIIGGYAEFLYQIG LLDEKQKKYFQKQCHECIEHIRKQNWFEAFEILDKLLDGDLTS DPSYFQNVTGCSNYYNFLRCTEPEDQLYYVKFLSLPEVRQAIH VGNQTFNDGTIVEKYLREDTVQSVKPWLTEIMNNYKVLIYNGQ LDIIVAAALTERSLMGMDWKGSQEYKKAEKKVWKIFKSDSEVA GYIRQAGDFHQVIIRGGGHILPYDQPLRAFDMINRFIYGKGWD PYVG
587	1326	883	541	RDERAKVPFRSTEG\GRRRRRRMEAVVFVFSLLDCCALIFLSV YFIITLSDLECDYINARSCCSKLNKWVIPELIGHTIVTVLLLM SLHWFIFLLNLPVATWNIYRYIMVPSGNMGVFDPTEIHNRGQL KSHMKEAMIKLGFHLLCFFMYLYSMILALIND
588	1327	1126	732	QSPGHGAPCQLSSSHSRSNRLLSPMARATLSAAPSNPRLLRVA LLLLLLVAASRRAAGAPLATELRCQCLQTLQGIHLKNIQSVKV KSPGPHCAQTEVIATLKNGQKACLNPASPMVKKIIEKMLKNGK SN
589	1328	197	330	HPLSLVFLALNTGKEKSHPGGGGERPGLAGQGEPDHPAGARDG R
590	1329	1	1575	CTPVARSMATTATCTRFTDDYQLFEELGKGAFSVVRRCVKKTS TQEYAAKIINTKKLSARDHQKLEREARICRLLKHPNIVRLHDS ISEEGFHYLVFDLVTGGELFEDIVAREYYSEADASHCIHQILE SVNHIHQHDIVHRDLKPENLLLASKCKGAAVKLADFGLAIEVQ GEQQAWFGFAGTPGYLSPEVLRKDPYGKPVDIWACGVILYILL VGYPPFWDEDQHKLYQQIKAGAYDFPSPEWDTVTPEAKNLINQ MLTINPAKRITADQALKHPWVCQRSTVASMMHRQETVECLRKF NARRKLKGAILTTMLVSRNFSAAKSLLNKKSDGGVKPQSNNKN SLVSPAQEPAPLQTAMEPQTTVVHNATDGIKGSTESCNTTTED EDLKVRKQEIIKITEQLIEAINNGDFEAYTKICDPGLTSFEPE ALGNLVEGMDFHKFYFENLLSKNSKPIHTTILNPHVHVIGEDA ACIAYIRLTQYIDGQGRPRTSQSEETRVWHRRDGKWLNVHYHC SGAPAAPLQ
591	1330	17	636	NRRTVKMLLELSEEHKEHLAFLPQVDSAVVAEFGRIAVEFLRR GANPKIYEGAARKLNVSSDTVQHGVEGLTYLLTESSKLMISEL DFQDSVFVLGFSEELNKLLLQLYLDNRKEIRTILSEL\APSLP SYHNLEWRLDVQLASRSLRQQIKPAVTIKLHLNQNGDHNTKVL QTDPATLLHLVQQLEQALEEMKTNHCRRVVRNIK
592	1331	1	237	GTSIYLAHRVA\RAWELAQFIHHTSKKADVVLACGDSIVHPED LICCPLTGRSCLCDVHLLSSLLARLGRGYAVSLTNL

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593	1332	2506	1684	RGCGSCGYKPSAGPAWRPRPPPAVSPLRHPEPAKVLSFSSCPL PALGRTGPSRAARAQSLTMASLFKKKTVDDVIKEQNRELRGTQ RAIIRDRAALEKQEKQLELEIKKMAKIGNKEACKVLAKQLVHL RKQKTRTFAVSSKVTSMSTQTKVMNSQMKMAGAMSTTAKTMQA VNKKMDPQKTLQTMQNFQKENMKMEMTEEMINDTLDDIFDGSD DEEESQDIVNQVLDEIGIEISGKMAKAPSAARSLPSASTSKAT ISDEEIERQLKALGVD
594	1333	905	432	STDGNGAERLFAELRKMNARGLGSELKDSIPVTELSASGPFES HDLLRKGFSCVKNELLPSHPLELSEKNFQLNQDKMNFSTLRNI QGLFAPLKLQMEFKAVQQVQRLPFLSSSNLSLDVLRGNDETIG FEDILNDPSQSEVMGEPHLMVEYKLGLL
595	1334	111	117	RNMKLHYVAVLTLAILMFLTWLPESLSCNKALCASDVSKCLIQ ELCQCRPGEGNCSCCKECMLCLGALWDECCDCVGMCNPRNYSD TPPTSKSTVEELHEPIPSLFRALTEGDTQLNWNIVSFPVAEEL SHHENLVSFLETVNQPHHQNVSVPSNNVHAPYSSDK/E*LPTV DFFHSAPSCGLSM*SIIFFEET
596	1335	817	278	VGGVPTWLEGCGSGNPSPRSGGGPGARLTLPALQMTVHNLYLF DRNGVCLHYSEWHRKKQAGIPKEEEYKLMYGMLFSIRSFVSKM SPLDMKDGFLAFQTSRYKLHYYETPTGIKVVMNTDLGVGPIRD VLHHIYSALYVELVVKNPLCPLGQTVQSELFRSRLDSYVRSLP FFSARAG
597	1336	171	881	PGLSQEPSGSMETVVIVAIGVLATIFLASFAALVLVCRQRYCR PRDLLQRYDSKPIVDLIGAMETQSEPSELELDDVVITNPHIEA ILENEDWIEDASGLMSHCIAILKICHTLTEKLVAMTMGSGAKM KTSASVSDIIVVAKRISPRVDDVVKSMYPPLDPKLLDARTTAL LLSVSHLVLVTRNACHLTGGLDWIDQSLSAAEEHLEVLREAAL ASEPDKGLPGPEGFLQEQSAI
598	1337	1078	594	VGMELPAVNLKVILLGHWLLTTWGCIVFSGSYAWANFTILALG VWAVAQRDSIDAISMFLGGLLATIFLDIVHISIFYPRVSLTDT GRFGVGMAILSLLLKPLSCCFVYHMYRERGGELLVHTGFLGSS QDRSAYQTIDSAEAPADPFAVPEGRSQDARGY
599	1338	717	116	PASRPLLGPDTGSVANIFKGLVILPEMSLVIRNLQRVIPIRRA PLRSKIEIVRRILGVQKFDLGIICVDNKNIQHINRIYRDRNVP TDVLSFPFHEHLKAGEFPQPDFPDDYNLGDIFLGVEYIFHQCK ENEDYNDVLTVTATHGLCHLLGFTHGTEAEWQQMFQKEKAVLD ELGRRTGTRLQPLTPGPLPEGAEGRVPF
600	1339	1	804	LRNALDVLHREVPRVLVNLVDFLNPTIMRQVFLGNPDKCPVQQ A/MLEPLGSKTETLDLRAEMPITCPTQNEPFLRTPRNSNYTYP IKPAIENWGSDFLCTEWKASNSVPTSVHQLRPADIKVVAALGD SLTTAVGARPNNSSDLPTSWRGLSWSIGGDGNLETHTTLPNIL KKFNPYLLGFSTSTWEGTAGLNVAAEGARARDMPAQAWDLVER MKNSPDINLEKDWKLVTLFIGGNDLCHYCENPEAHLATEYVQH IQQALDILSE

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601	1340	1	860	VVEFLWSRRPSGSSDPRPRRPASKCQMMEERANLMHMMKLSIK VLLQSALSLGRSLDADHAPLQQFFVVMEHCLKHGLKVKKSFIG QNKSFFGPLELVEKLCPEASDIATSVRNLPELKTAVGRGRAWL YLALMQKKLADYLKVLIDNKHLLSEFYEPEALMMEEEGMVIVG LLVGLNVLDANL\CLKGEDLDSQVGVIDFSLYLKDVQDLDGGK EHERITDVLDQKNYVEELNRHLSCTVGDLQTKIDGLEKTNSKL QERVSAATDRICSLQEEQQQLREQNELIR
602	1341	60	762	KPEGARRVQFVMGLFGKTQEKPPKELVNEWSLKIRKEMRVVDR QIRDIQREEEKVKRSVKDAAKKGQKDVCIVLAKEMIRSRKAVS KLYASKAHMNSVLMGMKNQLAVLRVAGSLQKSTEVMKAMQSLV KIPEIQATMRELSKEMMKAGIIEEMLEDTFESMDDQEEMEEEA EMEIDRILFEITAGALGKAPSKVTDALPEPEPPGAMAASEDEE EEEEALEAMQSRLATLRS
603	1342	3	456	RWNSIMELALLCGLVVMAGVIPIQGGILNLNKMVKQVTGKMPI LSYWPYGCHCGLGGRGQPKDATDWCCQTHDCCYDHLKTQGCGI YKDYYRYNFSQGNIHCSDKGSWCEQQLCACDKEVAFCLKRNLD TYQKRLRFYWRPHCRGQTPGC
604	1343	249	632	KTVAEEASVGNPEGAFMKMLQARKQHMSTELTIESEAPSDSSG INLSGFGSEQLDTNDESDVSSALSYILPYLSLRNLGAESILLP FTEQLFSNVQDGDRLLSILKNNRKSPSQSSLLGNKFKNKIF
605	1344	2	382	LPLTLLLAAPFAHLLLPPGHDQSPCWHPGPALSPGTLGPLSWA MANSGLQLLGYFLALGGWVGIIASTALPQWKQSSYAGDASIQL RSKVFVLESEWGGDSLGLPRDCGWSCLLHSAVRSEKGFWS
606	1345	2	987	DPRVRPPLLQPPPPPLLPRLVILKMAPLDLDKYVEIARLCKYLP ENDLKRLCDYVCDLLLEESNVQPVSTPVTVCGDIHGQFYDLCE LFRTGGQVPDTNYIFMGDFVDRGYYSLETFTYLLALKAKWPDR ITLLRGNHESRQITQVYGFYDECQTKYGNANAWRYCTKVFDML TVAALIDEQILCVHGGLSPDIKTLDQIRTIERNQEIPHKGAFC DLVWSDPEDVDTWAISPRGAGWLFGAKVTNEFVHINNLKLICR AHQLVHEGYKFMFDEKLVTVWSAPNYCYRCGNIASIMVFKDVN TREPKLFRAVPDSERVIPPRTTTPYFL
607	1346	10	768	SFAGAAARPSTPPASGRGAAPGRPGPSPMDLRAGDSWGMLACL CTVLWHLPAVPALNRTGDPGPGPSIQKTYDLTRYLEHQLRSLA GTYLNYLGPPFNEPDFNPPRLGAETLPRATVDLEVWRSLNDKL RLTQNYEAYSHLLCYLRGLNRQAATAELRRSLAHFCTSLQGLL GSIAGVMAALGYPLPQPLPGTEPTWTPGPAHSDFLQKMDDFWL LKELQTWLWRSAKDFNRLKKKMQPPAAAVTLHLGAHGF
608	1347	114	700	IKISLKKRSMSGISGCPFFLWGLLALLGLALVISLIFNISHYV EKQRQDKMYSYSSDHTRVDEYYIEDTPIYGNLDDMISEPMDEN CYEQMKARPEKSVNKMQEATPSAQATNETQMCYASLDHSVKGK RRKPRKQNTHFSDKDGDEQLHAIDASVSKTTLVDSFSPESQAV EENIHDDPIRLFGLIRAKREPIN

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609	1348	2	807	VEFHPQRARAGARAPSMGVLLTQRTLLSLVLALLFPSMASMAA IGSCSKEYRVLLGQLQKQTDLMQDTSRLLDPYIRIQGLDVPKL REHCRERPGAFPSEETLRGLGRRCFLQTLNATLGCVLHRLADL EQRLPKAQDLERSGLNIEDLEKLQMARPNILGLRNNIYCMAQL LDNSDTAEPTKAGRGASQPPTPTPASDAFQRKLEGCRFLHGYH RFMHSVGRVFSKWGESPNRSRRHSPHQALRKGVRRTRPSRKGK RLMTRGQLPR
610	1349	2	418	DFPGRRFRLVWLLVLRLPWRVPGQLDPTTGRRFSEHKLCADDE CSMLMYRGEALEDFTGPDCRFVNFKKGDPVYVYYKLARGWPEV WAGSVGRTFGYFPKDLIQVVHEYTKEELQVPTNETDFVCFDGG RDDFHNYNV
611	1350	823	115	SPLGKEGQEEVRVKIKDLNEHIVCCLCAGYFVDATTITECLHT FCKSCIVKYLQTSKYCPMCNIKIHETQPLLNLKLDRVMQDIVY KLVPGLQDSEEKRIREFYQSRGLDRVTQPTGEEPALSNLGLPF SSFDHSKAHYYRYDEQLNLCLERLSSGKDKNKSVLQNKYVRCS VRAEVRHLRRVLCHRLMLNPQHVQLLFDNEVLPDHMTMKQIWL SRWFGKPSPLLLQYSVKEKRR
612	1351	9	545	LWWYSAHAAVDAMMDVFGVGFPSKVPWKKMSAEELENQYCPSR WVVRLGAEEALRTYSQIGIEATTRARATRKSLLHVPYGDGEGE KVDIYFPDESSEATTRARATRKSLLHVPYGDGEGEKVDIYFPD ESSEALPFFLFFHGGYWQSGRHPGPHGRPGDPQRCVCPEAVSK QQAFSW
613	1352	49	902	GVRMASRGRRPEHGGPPELFYDETEARKYVRNSRMIDIQTRMA GRALELLYLPENKPCYLLDIGCGTGLSGSYLSDEGHYWVGLDI SPAMLDEAVDREIEGDLLLGDMGQGIPFKPGTFDGCISISAVQ WLCNANKKSENPAKRLYCFFASLFSVLVRGSRAVLQLYPENSE QLELITTQATKAGFSGGMVVDYPNSAKAKKFYLCLFSGPSTFI PEGLSENQDEVEPRESVFTNERFPLRMSRRGMVRKSRAWVLEK KERHRRQGREVRPDTQYTGRKRKPRF
614	1353	1960	871	TLICRMAGCGEIDHSINMLPTNRKANESCSNTAPSLTVPECAI CLQTCVHPVSLPCKHVFCYLCVKGASWLGKRCALCRQEIPEDF LDKPTLLSPEELKAASRGNGEYAWYYEGRNGWWQYDERTSREL EDAFSKGKKNTEMLIAGFLYVADLENMVQYRRNEHGRRRKIKR DIIDIPKKGVAGLRLDCDANTVNLARESSADGADSVSAQSGAS VQPLVSSVRPLTSVDGQLTSPATPSPDASTSLEDSFAHLQLSG DNTAERSHRGEGEEDHESPSSGRVPAPDTSIEETESDASSDSE DVSAVVAQHSLTQQRLLVSNANQTVPDRSDRSGTDRSVAGGGT VSVSVRSRRPDGQCTVTEV

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615	1354	5653	4549	GATPLGSVGGRTGKMDAATLTYDTLRFAEFEDFPETSEPVWIL GRKYSIFTEKDEILSDVASRLWFTYRKNFPAIGGTGPTSDTGW GCMLRCGQMIFAQALVCRHLGRDWRWTQRKRQPDSYFSVLNAF IDRKDSYYSIHQIAQMGVGEGKSIGQWYGPNTVAQVLKKLAVF DTWSSLAVHIAMDNTVVMEEIRRLCRTSVPCAGATAFPADSDR HCNGFPAGAEVTNRPSPWRPLVLLIPLRLGLTDINEAYVETLK HCFMMPQSLGVIGGKPNSAHYFIGYVGEELIYLDPHTTQPAVE PTDGCFIPDESFHCQHPPCRMSIAELDPSIAVVRGGHLSTQAF GAECCLGMTRKTFGFLRFFFSMLG
616	1355	416	65	PTTSNRAITLTAWPKIPFLGICEAKNPRSENMRLATILEVACH HLGSGPPPSWELWEQGPPGNSSRYIEFLNKHTYIKGTLRVYTK KFCMLVIKSFESKSCVCVYDFDSKSSVNVTV
617	1356	2	382	PRVRFRLLHVTSIRSAWILCGIIWILIMASSIMLLDSGSEQNG SVTSCLELNLYKIAKLQTVNYIALVVGCLLPFFTLSICYLLII RVLLKVEVPESGLRVSHRKALTTIIITLIIFFLCFLPYHT
618	1357	3	672	GRHWLGSAQLTDGGSARKPKMAVPAALILRESPSMKKAVSLIN AIDTGRFPRLLTRILQKLHLKAESSFSEEEEEKLQAAFSLEKQ DLHLVLETISFILEQAVYHNVKPAALQQQLENIHLRQDKAEAF VNTWSSMGQETVEKFRQRILAPCKLETVGWQLNLQMAHSAQAK LKSPQAVLQLGVNNEDSKSLEKVLVEFSHKELFDFYNKLETIQ AQLDSLT
619	1358	557	208	EASSAKTKRKEEKGPKAKMKLMVLVFTIGLTLLLGVQAMPANR LSCYRKILKDHNCHNLPEGVADLTQIDVNVQDHFWDGKGCEMI CYCNFSELLCCPKDVFFGPKISFVIPCNNQ
620	1359	335	1735	KMAEAVFHAPKRKRRVYETYESPLPIPFGQDHGPLKEFKIFRA EMINNNVIVRNAEDIEQLYGKGYFGKGILSRSRPSFTISDPKL VAKWKDMKTNMPIITSKRYQHSVEWAAELMRRQGQDESTVRRI LKDYTKPLEHPPVKRNEEAQVHDKLNSGMVSNMEGTAGGERPS VVNGDSGKSGGVGDPREPLGCLQEGSGCHPTTESFEKSVREDA SPLPHVCCCKQDALILQRGLHHEDGSQHIGLLHPGDRGPDHEY VLVEEAECAMSEREAAPNEELVQRNRLICRRNPYRIFEYLQLS LEEAFFLVYALGCLSIYYEKEPLTIVKLWKAFTVVQPTFRTTY MAYHYFRSKGWVPKVGLKYGTDLLLYRKGPPFYHASYSVIIEL VDDHFEGSLRRPLSWKSLAALSRVSVNVSKELMLCYLIKPSTM TDKEMESPECMKRIKVQEVILSRWVSSRERSDQDDL

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621	1360	5693	4435	RDIWTMNLQRYWGEIPISSSQTNRSSFDLLPREFRLVEVHDPP LHQPSANKPKPPTMLDIPSEPCSLTIHTIQLIQHNRRLRNLIA TAQAQNQQQTEGVKTEESEPLPSCPGSPPLPDDLLPLDCKNPN APFQIRHSDPESDFYRGKGEPVTELSWHSCRQLLYQAVATILA HAGFDCANESVLETLTDVAHEYCLKFTKLLRFAVDREARLGQT PFPDVMEQVFHEVGIGSVLSLQKFWQHRIKDYHSYMLQISKQL SEEYERIVNPEKATEDAKPVKIKEEPVSDITFPVSEELEADLA SGDQSLPMGVLGAQSERFPSNLEVEASPQASSAEVNASPLWNL AHVKMEPQESEEGNVSGHGVLGSDVFEEPMSGMSEAGIPQSPD DSDSSYGSHSTDSLMGSSPVFNQRCKKRMRKI
622	1361	15	678	REQILFIEIRDTAKGGETEQPPSLSPLHGGRMPEMGEGIQSLA RETQSHRGRRQGWDATWVTRCRESLNRGGAGAGKRAGALAHHV FLALIEPNLAEREASEEEVKACSDETVVADLLVKVVYVLGAIL KIFLREGNVLNQHSGMDIEKYSEHYQHDHSPGAEDDAAGGQLR PTAQERRHKEGSRGSPRCKRARKAVGESPGCPRPRVRPRVRPR VRPRV
623	1362	1080	835	GTRGCCREGTAYAKAYQFMASHLSLGKPVSTGSIPRFNKALFN KQAKCKPNHYSFIGLSMLSPENFSIGCKYSVWFSETKGF
624	1363	872	441	GAQGVRVGIGEVGRVQAPRVSLLHSQGVPRGGTGEAVKEEGRG SSLHPPLPPQGLGEYAACQSHAFMKGVFTFVTGTGMAFGLQMF IQRKFPYPLQWSLLVAVVAGSVVSYGVTRVESEKCNNLWLFLE TGQLPKDRSTDQRS
625	1364	1	585	GTSELLCIQRWNWGPAFPPRPGLALALAPTLQLLVEMGSAKSVPV TPARPPPHNKHLARVADPRSPSAGILRTPIQVESSPQPGLPAG EQLEGLKHAQDSDPRSPLGKN*GHGWQVGQGSDLGSPQPLPPS ASHL/YSSRASRCSQPPCLSLPWFGVRSSPANTYHVPVTSLCP SPALHYTALQAGIISTSQARAPR
626	1365	36	381	PLLLPRFIDIPCLLCYLTQVTPDDMYAKAFLIKPNTAITGTDR RKL\RADETTDFP\TLGTDQIYELLPGKDELNIVKSNAHKRDA *TAYVSGENHILSEP*KNLYPAVNTLSSYP
627	1366	763	1003	SRQPPPLLTMVFLLEFLFLVFFPGCVNQLLLSYPWQGQGTSLW SSLSFHWLLPQEDSSRLSIFPLRAGSPPQPAQAPQRI
628	1367	296	1199	KSREQSSLFAADAERSWGGKSCCLLRWRFVGKASHFPRLLPLP GEERPETKERAWKMEQTWTRDYFAEDDGEMVPRTSHTA/ASVS LTAFLSDTKDRGPPVQSQIWRSGEKVPFVQTYSLRAFEKPPQV QTQALRDFEKHLNDLKKENFSLKLLIYFLEERMQQKYEASRED IYKRNTELKVEVESLKRELQDKKQHLDKTWADVENLNSQNEAE LRRQFEERQQEMEHVYELLENKMQLLQEESRLAKNEAARMAAL VEAEKECNLELSEKLKGVTKNWEDVPGDQVKPDQYTEALAQRD K

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629	1368	191	1116	TRRRGTTWRSPRPRRASTSRPSTRPRGVASWPWETAGTATTGP GPSARTRRRAARRRRSRPRRRAHGGLSQPAGWQSLLSFTILFL AWLAGFSSRLFAVIRFESIIHEFDPWFNYRSTHHLASHGFYEF LNWFDERAWYPLGRIVGGTVYPGLMITAGLIHWILNTLNITVH IRDVCVFLAPTFSGLTSISTFLLTRELWNQGAGLLAACFIAIV PGYISRSVAGSFDNEGIAIFALQFTYYLWVKSVKTGSVFWTMC CCLSYFYMVSAWGGYVFIINLIPLHAFVLVLM/Q/RYSKRVYI *YSTFYIVG
630	1369	852	214	RRLIVVLSDAFLSRAWCSHSF/RVGPARGWVGPSVAPTPLTVP PRREGLCRLLELTRRPIFITFEGQRRDPAHPALRLLRQHRHLV TLLLWRPGSVTPSSDFWKEVQLALPRKVRYRPVEGDPQTQLQD DKDPMLILRGRVPEGRALDSEVDPDPEGDLGVRGPVFGEPSAP PHTSGVSLGESRSSEVDVSDLGSRNYSARTDFYCLVSKDDM
631	1370	246	1091	LSHEGWRRGREGERINSSVASLAPLCILPDLPSNMHLARLVGS CSLLLLLGALSGWAASDDPIEKVIEGINRGLSNAEREVGKALD GINSGITHAGREVEKVFNGLSNMGSHTGKELDKGVQGLNHGMD KVAHEINHGIGQAGKEAEKLGHGVNNAAGQAGKEADKAVQGFH TGVHQAGKEAEKLGQGVNHAADQAGKEVEKLGQGAHHAAGQAG KELQNAHNGVNQASKEANQLLNGNHQSGSSSHQGGATTTPLAS GASVNTPFINLPALWRSVANIMP
632	1371	3150	2792	SASGGLGMTVEGPEGSEREHRPPEKPPRPPRPLHLSDRSFRRK KDSVESHPTWVDDTRIDADAIVEKIVQSQDFTDGSNTEDSNLR LFVSRDGSATLSGIQLATRVSSGVYEPVVIESH
633	1372	667	993	ERSGWPQPEGTVTAQGPLFWERLSGAVTVSSGYKADMWPSFPQ \VRVGSFLFGILFFSFGSSSLPPGLPPPASLLCCAVQWGARAL FLPCLKERALGMEMRNNTLSFRQ
634	1373	636	2	SSSNLRLSFLINENILGKCFRSGPSCAGPRISPLAAQYECPRP SLLIMASVPKTNKIEPRSYSIIPSCGI\RRLGPALNTLIF\QS KRFGPRG\HSAKSIEGAPRGKGRGRAVARLAADRPPAPKIQLR AF*LQQL*YTLLELELPRLLAPDLPSNGSSLKDLKWTHSNYRA SKESCIVIF\VTTSPGREWVICALAAFLGCGS\LSQAPSPES
635	1374	61	519	LRIINTYFCFKFLIVNYIHGTTKARKPHVLGESLISAMSRQEP KMFVLLYVTSFAICASGQPRGNQLKGENYSPRYICSIPGLPGP PGPPGANGSPGPHGRIGLPGRDGRDGRKGEKGEKGTAGLRGKT GPLGLAGEKGDQGETGKKGPIGPE
636	1375	129	579	FASAMLGSRVDRPKLSVAPSVVLEEDQVLVSPAVDLEAGCRLR DFTEKIMNVKGKVILSMLVVSTVIIVFWEFINSTEGSFLWIYH SKNPEVDDSSAQKGWWFLSWFNNGIHNYQQGEEDIDKEKGREE TKGRKMTQQSFGYGTGLIQT

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637	1376	127	1376	GSHRFSLASPLDPEVGPYCDTPTMRTLFNLLWLALACSPVHTT LSKSDAKKAASKTLLEKSQFSDKPVQDRGLVVTDLKAESVVLE HRSYCSAKARDRHFAGDVLGYVTPWNSHGYDVTKVFGSKFTQI SPVWLQLKRRGREMFEVTGLHDVDQGWMRAVRKHAKGLHIVPR LLFEDWTYDDFRNVLDSEDEIEELSKTVVQVAKNQHFDGFVVE VWNQLLSQKRVGLIHMLTHLAEALHQARLLALLVIPPAITPGT DQLGMFTHKEFEQLAPVLDGFSLMTYDYSTAHQPGPNAPLSWV RACVQVLDPKSKWRSKILLGLNFYGMDYATSKDAREPVVGARY IQTLKDHRPRMVWDSQVSEHFFEYKKSRSGRHVVFYPTLKSLQ VRLELARELGVGVSIWELGQGLDYFYDLL
638	1377	998	48	GREGTGWGPAMSEVTRSLLQRWGASFRRGADFDSWGQLVEAID EYQILARHLQKEAQAQHNNSEFTEEQKKTIGKIATCLELRSAA LQSTQSQEEFKLEDLKKLEPILKNILTYNKEFPFDVQPVPLRR ILAPGEEENLEFEEDEEEGGAGAGSPDSFPARVPGTLLPRLPS EPGMTLLTIRIEKIGLKDAGQCINPYITVSVKDLNGIDLTPVQ DTPVASRKEDTYVHFNVDIELQKHVEKLTKGAAIFFEFKHYKP KKRFTSTKCFAFMEMDEIKLGPIVIELYKKPTDFKRKQLQLLT KKPLYLHLHQTLHKE
639	1378	1298	1569	GSITSEPSLDSLQPLPPGFKRFSCLSLPSSWDYRRPPPGLAYF CIFSRDEVSPCWPGCSPSPDLMIRLPRPPSVGITGVSHRAWPT IDNF
640	1379	196	1197	KMPVPWFLLSLALGRSPVVLSLERLVGPQDATHCSPGLSCRLW DSDILCLPGDIVPAPGPVLAPTHLQTELVLRCQKETDCDLCLR VAVHLAVHGHWEEPEDEEKFGGAADSGVEEPRNASLQAQVVLS FQAYPTARCVLLEVQVPAALVQFGQSVGSVVYDCFEAALGSEV RIWSYTQPRYEKELNHTQQLPDCRGLEVVWNSIPSCWALPWLNV SADGDNVHLVLNVSEEQHFGLSLYWNQVQGPPKPRWHKNLVRP PPSQVHSHCRP\CLCK\DAVPYQRGSLKRTHPKQGKIGGGTSA FLVSLTLASSSSSLSSPTSFLYLFHRLDRRSLP
641	1380	756	1110	LRLWNRNQMMHNIIVKELIVTFFLGITVVQMLISVTGLKGVEA QNGSESEVFVGKYETLVFYWPSLLCLAFLLGRFLHMFVKALRV HLGWELQVEEKSVLEVHQGEHVKQLLRIPRP
642	1381	631	1278	KVNRKLRKKGKISHDKRKKSRSKAIGSDTSDIVHIWCPEGMKT SDIKELNIVLPEFEKTHLEHQQRIESKVCKAAIATFYVNVKEQ FIKMLKESQMLTNLKRKNAKMISDIEKKRQRMIEVQDELLRLE PQLKQLQTKYDELKERKSSLRNAAYFLSNLKQLYQDYSDVQAQ EPNVKETYDSSSLPALLFKARTLLGAESHLRNINHQLEKLLDQ G
643	1382	1167	755	VWVAMEEPPVREEE*EEGEEDEERDEVGPEGALGKSPFQLTAE DVYDISYLLGRELMALGSDPRVTQLQFKVVRVLEMLEALVNEG SLALEELKMERDHLRKEVEGLRRQSPPASGEWPDSTKRRPRRK KRKRCCGY

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644	1383	1	271	PRNDHRLTQSRRDSSSKTRAFLVPRFLPAHAGVTSEERTAMKR EGGAAHLCSDSLPESQQQDGNHAPNFSSHGSCRRRQRRRHDKA LHAR
645	1384	1	499	THASEKSRATMSSWSRQRPKSPGGIQPHVSRTLFLLLLLAASA WGVTLSPKDCQVFRSDHGSSISCQPPAEIPGYLPADTVHLAVE FFNLTHLPANLLQGASKLQELHLSSNGLESLSPEFLRPVPQLR VLDLTRNALTGLPPGLFQASATLDTLVLKENQLEVLE
646	1385	178	675	ERPRIMDLAGLLKSQFLCHLVFCYVFIASGLIINTIQLFTLLL WP.INKQLFRKINCRLSYCISSQLVMLLEWWSGTECTIFTDPRA YLKYGKENAIVVLNHKF\EI\DFLCGWSLSERFGLLGVSQKCI PPCLTHFFGSAPPLVFLLLVIQNLQKNQQSFYLMKWS
647	1386	630	1499	MIVFGWAVFLASRSLGQGLLLTLEEHIAHFLGTGGAATTMGNS CICRDDSGTDDSVDTQQQQAENSAVPTADTRSQPRDPVRPPRR GRGPHEPRRKKQNVDGLVLDTLAVIRTLVDNDQEPPYSMITLH EMAETDEGWLDVVQSLIRVIPLEDPLGPAVITLLLDECPLPTK DALQKLTEILNLNGEVACQDSSHPAKHRNTSAVLGCLAEKLAG PASIGLLSPGILEYLLQCLLQSHPTVMLFALIALEKFAQTSEN KLTISESSISDRL\VTLESW\ANDPDYLKRQVG
648	1387	1	962	RFGTRGLAKSKGVVLMALCALTRALRSLNLAPPTVAAPAPSLF PAAQMMNNGLLQQPSALMLLPCRPVLTSVALNANFVSWKSRTK YTITPVKMRKSGGRDHTGRIRVHGIGGGHKQRYRMIDFLRFRP EETKSGPFEEKVIQVRYDPCRSADIALVAGGSRKRWIIATENM QAGDTILNSNHIGRMAVAAREGDAHPLGALPVGTLINNVESEP GRGAQYIRAAGTCGVLLRKVNGTAIIQLPSKRQMQVLETCVAT VGRVSNVDHNKRVIGKAGRNRWLGKRPNSGRWHRKGGWAGRKI RPLPPMKSYVKLPSASAQS
649	1388	291	714	PVQGARCWLDARRNVRVFSGVCCGCGIHGYWAEPCGGCGAMEG LRSSVELDPELTPGKLDEEMVGLPPHDASPQVTFHSLDGKTVV CPHFMGLLLGLLLLLTLSVRNQLCVRGERQLAETLHSQVKEKS QLIGKKTDCRD
650	1389	874	2220	GARGRPLAETWPFLTAPVLPGQLQITEPTMAEKGDCIASVYGY DLGGRFVDFQPLGFGVNGLVLSAVDSRACRKVAVKKIALSDAR SMKHALREIKIIRRLDHDNIVKVYEVLGPKGTDLQGELFKFSV AYIVQEYMETDLARLLEQGTLAEEHAKLFMYQLLRGLKYIHSA NVLHRDLKPANIFISTEDLVLKIGDFGLARIVDQHYS\HKGYL SEGLVTKWYRSPRLLLSPNNYTKAIDMWAAGCILAEMLTGRML FAGAHELEQMQLILETIPVIREEDKDELLRVMPSFVSSTWEVK RPLRKLLPEVNSEAIDFLEKILTFNPMDRLTAEMGLQHPYMSP YSCPEDEPTSQHPFRIEDEIDDIVLMAANQSQLSNWDTCSSRY PVSLSSDLEWRPDRCQDASEVQRDPRAGSAPLAENVQVDPRKD SHSSSASCQAGRNGVSRYQ

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651	1390	1	2451	MRTLGTCLATLAGLLLTAAGETFSGGCLFDEPYSTCGYSQSEG DDFNWEQVNTLTKPTSDPWMPSGSFMLVNASGRPEGQRAHLLL PQLKENDTHCIDFHYFVSSKSNSPPGLLNVYVKVNNGPLGNPI WNISGDPTRTWNRAELAISTFWPNFYQVIFEVITSGHQGYLAI DEVKVLGHPCTRTPHFLRIQNVEVNAGQFATFQCSAIGRTVAG DRLWLQGIDVRDAPLKEIKVTSSRRFIASFNVVNTTKRDAGKY RCMI\RTEGGVGISNYAEL\VVKEPPVPIAPPQLASVGATYLW IQLNANSINGDGPIVAREVEYCTASGSWNDRQPVDSTSYKIGH LDPDTEYEISVLLTRPGEGGTGSPGPALRTRTKCADPMRGPRK LEVVEVKSRQITIRWEPFGYNVTRCHSYNLTVHYCYQVGGQEQ VREEVSWDTENSHPQHTITNLSPYTNVSVKLILMNPEGRKESQ ELIVQTDEDLPGAVPTESIQGSTFEEKIFLQWREPTQTYGVIT LYEITYKAVSSFDPEIDLSNQSGRVSKLGNETHFLFFGLYPGT TYSFTIRASTAKGFGPPATNQFTTKISAPSMPAYELETPLNQT DNTVTVMLKPAHSRGAPVSVYQIVVEEERPRRTKKTTEILKCY PVPIHFQNASLLNSQYYFAAEFPADSLQAAQPFTIGDNKTYNG YWNTPLLPYKSYRIYFQAASRANGETKIDCVQVATKGAATPKP VPEPEKQTDHTVKIAGVIAGILLFVIIFLGVVLVMKKRLYKHG ASICSASGEASGSFQSWRKAKHKQACPMARAGARERAGGCLKL
652	1391	30	459	GIRQLLQLSRASMAARKSWTALRLCATVVVLDMVVCKGFVQDL DESFKENRNDDIWLVHFYAPWCGHCKKLEPIWNEAGLEMKSIG SPVKAGKMDATSYSSIASEFGVRGYPTIKLALIRPLPSQQMFE HMHKRHRVFFVYV
653	1392	168	1016	GLVIVISHFSPSPGLLPATQSPAMSDPITLNVGGKLYTTSLAT LTSFPDSMLGAMFSGKMPTKRDSQGNCFIDRDGKVFRYILNFL RTSHLDLPEDFQEMGLLRREADFYQVQPLIEALQEKEVELSKA EKNAMLNITLNQRVQTVHFTVREAPQIYSLSSSSMEVFNANIF STSCLFLKLLGSKLFYCSNGNLSSITSHLQDPNHLTLDWVANV EGLPEEEYTKQNLKRLWVVPANKQINSFQVFVEEVLKIALSDG FCIDSSHPHALDFMNNKIIRLIRY
654	1393	3	927	SCADNLVAASGGCWFVLGERRAGSLLSASYGTFAMPGMVLFGR RWAIASDDLVFPGFFELVVRVLWWIGILTLYLMHRGKLDCAGG ALLSSYLIVLMILLAVVICTVSAIMCVSMRGTICNPGPRKSMS KLLYIRLALFFPEMVWASLGAAWVADGVQCDRTVVNGIIATVV VSWIIIAATVVSIIIVFDPLGGKMAPYSSAGPSHLDSHDSSQL LNGLKTAATSVWETRIKLLCCCIGKDDHTRVAFSSTAELFSTY FSDTDLVPSDIAAGLALLHQQQDNIRNNQ\DLPRWSAMPQGAP RKLIWMQN
655	1394	1	716	FRAATAAAKGNGGGGGRAGAGDASGTRKKKGPGPLATAYLVIY NVVMTAGWLVIAVGLVRAYLAKGSYHSLYYSIEKPLKFFQTGA LLEILHCAIGIVPSSVVLTSFQVMSRVFLIWAVTHSVKEVQSE DSVL\FVIAWTITEIIRYSFYTFSLLNHLPYLIKRARYTLFIV LYPMGVSGELLTIYAALPFVRQAGLYSISLPNSTKKIFLISQV WWHMLAVSADAKAAEMPAVLKPGP

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656	1395	72	766	MLTGVGCLVSSESLSCVQCNSWEKSCVNSIASECPSHANTSCI SSSASSSLETPVRLYQNMFCSAENCSEETHITAFTVHVSAEEH FHFVSQCCEGKECSNTSDALDPPLKNVSSNAECPACYESNGTS CRGKPWKCYEEEQCVFLVAELKNDIESKSLVLKGCSNVSNATC QFLSGENKTLGGVIFRKFECANVNSLTPTSAPTTSHNVGSKAS LYLLALASLLLRGLLP
657	1396	97	746	VPARRRAMEIGTEISRKIRSAIKGKLQELGAYVDEELPDYIMV MVANKKSQDQMTEDLSLFLGNNTIRFTVWLHGVLDKLRSVTTE PSSLKSSDTNIFDSNVPSNKSNFSRGDERRHEAAVPPL\AIPS ARPEKRDSRVSTSSQESKTTNVRQTYDDGAATRLMSTV/KPLR EPAPSEDVIDIKPEPDDLIDEDLNFVQEKPLSQKKPTVTLTYG SSR
658	1397	155	560	ASRVLAAVMGLPWGQPHLGLQMLLLALNWLRPSLSLELVPYTP QITAWDLEGKVTATTFSLEQPRCVFDGLASASDTVWLVVAFSN ASRGFQNPETLADIPASPQLLTDGHYMTLPLSPDQLPCGDPMA GSGSAP
659	1398	416	539	NSLNNFFFETESCCVAQAGVQWRDLGSLQAPPPGFKRFSCL
660	1399	281	736	KSLPLQKHPKPSCQEDQGLGRGSLSGHSPLTLLTFLTSCALGD QQLLPPRTSGSLCQESMSEQSCQMSELRLLLLGKCRSGKSATG NAILGKHVFKSKFSDQTVIKMCQRESWVLRERKVVVIDTPDLF SSIACAEDKQRNIQHLLELSAP
661	1400	2	974	FVETTVSVQSAESSDALSWSRLPRALASVGPEEARSGAPVGGG RWQLSDRVEGGSPTLGLLGGSPSAQPGTGNVEAGIPSGRMLEP LPCWDAAKDLKEPQCPPGDRVGVQPGNSRVWQGTMEKAGLAWT RGTGVQSEGTWESQRQDSDALPSPELLPQDQDKPFLRKACSPS NIPAVIITDMGTQEDGALEETQGSPRGNLPLRKLSSSSASSTG FSSSYEDSEEDISSDPERTLDPNSAFLHTLDQQKPRVVESRSV TQAGVQWHDIGSLQPLPP/WIQAIL/HASAFRIAGTTGACHHA RIIFGFLVERGFHHVGQDGLYLLIL
662	1401	232	3	KICSSYFLRIICILQKEAQEASNLYTSCDFFSPAFYFVIYRLY NFKIHWPGAVAHTYSPSTLGGRGRWVT*GREFM
663	1402	250	556	LILSLPLLYGHLKSYTFPSEHYLHLLQTFATFNKYLNVCVLIF IHHKPVVPAIQGTNVGGSLEPRRLRLQQAMIVPLHFGLGNRVR PCLKKQQQQQQQQKK
664	1403	1	373	RMETKPVITCLKTLLIIYSFVFWITGVILLAAGVWGKLTLGSY ISLIAENSTYAPYVLIVTGTTIVAYPLV*FFFSYSSGFSYILA VRLIAGIALVYNYIPRSSSRALVRLVVLLRFLLSRHPS
665	1404	3	413	NAEHPGMDRHDLCQKAKLAEHAERDDDMAACMKTVTDQGAELS NEERNLLSDAHTNAV*ARRSSWMGA*RIEQKTEGADTQQQMAP DCREIFATELRDICDDVLSLLEKLLIPNASHA*SLVYYLHMIG DYYRYWL
666	1405	2	334	GGGPLGKMPRAQLADPWQMMAVESPSDCADNGQQIMDEPMGED EISPQTE*VSIKEVAVTHCVKEGHDKADPSQIELLRVLRQGSL GKVYLGKKVSGSDAKQLYAMKVLT

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667	1406	2	332	DAAGIRHEAHFGKLECLVQLVRAGA\SLFVSTTRYAQTPA\HI AAFGGHPQCLVWLIQAGANINKPDCEGETPIHKAARSGSLECI SALVANGAHVDNPKKGIRVLEWLFE \
668	1407	242	1157	LLKLMFIAELGDYDLAEHSPELVSEFRFVPIQTEEMELAIFEK WKEYRGQTPAQAETNYLNKAKWLEMYGVDMHVVKARDGNDYSL GLTPTGVLVFEGDTKIGLFFWPKITRLDFKKNKLTLVVVEDDD QGKEQEHTFVFRLDHPKACKHLWKCAVEHHAFFRLRGPVQKSS HRSGFIRLGSRFRYSGKTEYQTTKTNKARRSTSFERRPSKRYS RRTLQMKACATKPEELSVHNNVSTQSNGSQQAWGMRSALPVSP SISSAPVPVEIENLPQSPGTDQHDRKWLSAASDCCQRGGNQWN TRAL
669	1408	278	1	ATAPGLFNFF*FLFQCREEHKKKNPEVPVNFAEFSKKCSGRWK TMSSKEKFKFGEMAKADEVCYDREMKDYGPAKGGKKKDPNAPK RPPSGF
670	1409	139	646	AEGLGSWAVWAGLGWAGRHMEAGGATGALGVGSKLPSAFCFPG SSVAMDMFQKVEKIGEGTYGVVYKAKNRETGQLVALKKIRLDL *VLGRPLSYPPWAITTWALPDPFPLSWSPRLTPLGAAQQPLPV LSPVHCLLTSLCRGPDCGVWWMTCQGAQVSIAGALVILWG
671	1410	3	442	LCVSVLCSFSYLQNGWTASDPVHGYWFR\AGDHVSRNIPVATN NPVRAVQEETRDRFHLLGDPQNKDCTLSIRDTRESDAGTYVFC VERGNMKWNYKYDQLSVNVTASQDLLSRYRLEVPESVTVQEGL CVSVP/WQCPLPPLQLDCL
672	1411	84	836	QLQLCQNCTKRGECHCVPFDTYIKTKKEKKRLSVLPPTRLMEA RFSPINQILPWCRQDLAISISKAINTQEAPVKEKHARRIILGT HHEKGAFTFWSYAIGLPLPSSSILSWKFCHVLHKVLRDGHPNV LHDCQRYRSNIREIGDLWGHLHDRYGQLVNVYTKLLLTKISFH LKHPQFPAGLEVTDEVLEKAAGTDVNNM*VTLHGYMASSPRLP HSFLPRLTPRRPHGAVGLNESVALLVDAHAPRDRG
673	1412	307	664	AAPHRMPRAPHFMPLLLLLLLLSLPHTQAAFPQDPLPLLISDL QGTSPLSWLPSLEDDAVAA*LGLDFQRFLTLNRTLLVAARDHV FSFDLQAEEEGEGLVPNKYLTWRSQDVENCAVR*KLTLNRTLL VAARDHVFSFDLQAEEEGEGLVPNKYLTWRSQDVENCAVR
674	1413	24	420	HLVPKTRGRGTPSGDQSPVLTLTP*GDPPTILGPQTNQPKEHL TNFKSGKRSFHSLLQPLLLLLLHPSISPFLNFGSFPFLVETEET CFIHKLKTPALVTPDSLPLVFNHCGDACLIIHPHFRDVEFHHT GN

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675	1414	1	1101	CCSTKNISGDKACNLMIFDTRKTARQPNCYLFFCPNEEACPLK PAKGLMSYRIITDFPSLTRNLPSQELPQEDSLLHGQFSQAVTP ·LAHHHTDYSKPTDISWRDTLSQKFGSSDHLEKLFKMDEASAQL LAYKEKGHSQSSQFSSDQEIAHLLPENVSALPATVAVASPHTT SATPKPATLL\PTNASVTPSGTSQPQLA\TTAPPVTTVTSQPP TTLISTVFTRAAATLQAMATTAVLTTTFQAPTDSKGSLETIPF TEISNLTLNTGNVYNPTALSMSNVESSTMNKTASWEGREASPG SSSQGSVPENQYGLPFEKWLLIGSLLFGVLFLVIGLVLLGRIL SESLRRKRYSRLDYLINGIYVDI
676	1415	178	621	IFAGSGVMRLKISLLKEPKHQELVSCVGWTTAEELYSCSDDHH IVKWNLLTSETTQIVKLPDDIYPIDFHWFPKSLGVKKQTHAES FVLTSSDGKFHLISKLGRVEKSVEAHCGAVLAGRWNYEGTALV TVGEDGQI*IWSKTGMLIS
677	1416	1258	944	ARATTKRHFILLFLFFLRRC\LFLSPRMECNGAILAHCNLHLP GSSSSSASAS*VAGITDVRHHAQLILFVFLVETGFHRVGQAGL KLLTSGDLLTSASQSAGIIMGISHCAQPKKAF*TKTF
678	1417	876	1291	EAGSNDDLAT*KTCGRARPSSRSRQFGSRVWNHRQGVRSSPGE GAGSRSPCRRRHRRKHRRNVQSP*RRRSRSCSRRSGRCSVALL GACPVAGHSRGKVVCRRAHAITQRRRCCGFDPMVHPKEHRG*R ERSRKWSRS
679	1418	262	539	ATAPGLFNFF*FLFQCREEHKKKNPEVPVNFAEFSKKCSGRWK TMSSKEKFKFGEMAKADEVCYDREMKDYGPAKGGKKKDPNAPK RPPSGF
680	1419	104	236·	LTVNYVLVFSRDSGLRAIENLMQKKGKFDYILLETTGLADPGK K
681	1420	3	277	HEAALCRTRAVAAERHFLRVFLFFRPFRGVGTESGSESGSSKA KEPRTPSSSYGTAQYRRWPIAQEYKHCTAHNDTGTLCSELREP WRRPQ
682	1421	3	576	EGSSQANTLRSRKENRNNLLACLESHVLR*QFTESHLCSLMGD NPFQPKSNSKMAELFMECEEEELEPWQKKVKEVEDDDDDEPIF VGEISSSKPAISNILNRVNPSSYSRGLKNGALSRGITAAFKPT SQHYTNPTSNPVPASPINFHPESRSSDSSVIGQPFSKPVSVSK TIRPAQGSIGCCLSISTV
683	1422	6	627	CFSLEDILNFFLQGFSAGLFAFYHDKDGNPLTSRFADGLPPFN YSLGLYQWSDKVVRKVERLWDVRDNKIVRHTVYLLVTPRVVEE ARKHFDCPVLEGMELENQGGVGTELNHWEKRLLENEAMTGSHT QNRVLSRITLALMEDTGRQMLSPYCDTLRSNPLQLTCRQDQRA VAV\CNLQKFPKPLPQEYQYFDELSGIPAEDLPYYG

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684	1423	1	1272	AARRRRQLVSRRRTAE\YPRRRRSSPSARPPDVPGQQPKAAKS PSPVQGKKSPRLLCIEKVTTDKDPKEEKEEEDDSALPQEVSIA ASRPSRGWRSSRTSVSRHRDTENTRSSRSKTGSLQLICKSEPN TDQLDYDVGEEHQSPGGISSEEEBEEEEEMLISEEEIPFKDDP RDETYKPHLERETPKPRRKSGKVKEEKEKKEIKVEVEVEVKEE ENEIREDEEPPRKRGRRRKDDKSPRLPKRRKKPPIQYVRCEME GCGTVLAHPRYLQHHIKYQHLLKKKYVCPHPSCGRLFRLQKQL LRHAKHHTDQRDYICEYCARAFKSSHNLAVHRMIHTGEKPLQC EICGFTCRQKASLNWHMKKHDADSFYQFSCNICGKKFEKKDSV VAHKAKSHPEVLIAEALAANAGALITSTDILGTNPES
685	1424	56	526	MTANRLAESLLALSQQEELADLPKDYLLSESEDEGDNDGERKH QKLLEAISSLDGKNRRKLAERSEASLKVSEFNVSSEGSGEKLV LADLLEPVKTSSSLATVKKQLSRVKSKKTVELPLNKEEIERIH REVAFNKTAQVLSKWDPVVLKNRQAEQL*
686	1425	132	344	RIDFMFHSSAMVNSHRKPMFNIHRGFYCLTAILPQICICSQFS VPSSYHFTEDPGAFPVATNGERFPWQELRLPSVVIPLHYDLFV HPNLTSLDFVASEKIEVLVSNATQLIILHSKDLEITNATLQSE EDSRYMKPGKELKVLSYPAHEQIALLVPEKLTPHLKYYVAMDF QAKLGDGFEGFYKSTYRTLGGETRILAVTDFEPTQARMAFPCF DEPLFKANFSIKIRRESRHIALSNMPKVKTIELEGGLLEDHFE TTVKMSTYLVAYI/DL*FPLMGNDFLGRS
687	1426	3	678	RSKIPRSDPRVRTPAPAEAEQGKSQCPSGSTAQSWSAMDILVP LLQLLVLLLTLPLHLMALLGCWQPLCKSYFPYLMAVLTPKSNR KMESKKRELFSQIKGLTGASGKVALLELGCGTGANFQFYPPGC RVTCLDPNPHFEKFLTKSMAENRHLQYERFVVAPGEDMRQLAD GSMDVVVCTLVLCSVQSPRKVLQEVRRVLRPGGVLFFWEHVAE PYGSWAFMW
688	1427	240	641	RLQNSSLMDPKLGRMAASLLAVLLLLLLLERGMFSSPSPPPALL EKVFQYIDLHQDEFVQTLKEWVAIESDSVQPVPRFRQELFRMM AVAADTLQRLGARVASVDMGPQQLPDGQSLPIPPVILAELGSD PTKG
689	1428	1	116	FFFFEMESCSVTQAGVPWHDLSSLQPPPPRFKRFSCLS
690	1429	75	511	DPKAQLPEPLRVLWTAHLVAMAPGSRTSLLLAFALLCLPWLQE AGAVQTVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQ KYSFLHDSQTSFCFSDSIPTPSNMEETQQKSNLELLRISLLLI ESWLEPVRILMSIVPN

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691	1430	2	1364	FVKLIKKHQAAMEKEAKVMSNEEKKFQQHIQAQQKKELNSFLE SQKREYKLRKEQLKEELNENQSTPKKEKQEWLSKQKENIQHFQ AEEEANLLRRQRQYLELECRRFKRRMLLGRHNLEQDLVREELN KRQTQKDLEHAMLLRQHESMQELEFRHLNTIQKMRCELIRLQH QTELTNQLEYNKRRERELRRKHVMEVRQQPKSLKSKELQIKKQ FQDTCKIQTRQYKALRNHLLETTPKSEHKAVLKRLKEEQTRKL AILAEQYDHSINEMLSTQALRLDEAQEAECQVLKMQLQQELEL LNAYQSKIKMQAEAQHDRELRELEQRVSLRRALLEQKIEEEML ALQNERTERIRSLLERQAREIEAFDSESMRLGFSNMVLSNLSP EAFSHSYPGASGWSHNPTGGPGPHWGHPMGGPPQAWGHPMQGG PQPWGHPS\GPMQ\GVPR/GSSMGVR
692	1431	50	504	LAHGSFGVSDFPAPAAAPAHTLTSFSGSLSPQFRKPLGRAPAM PLVRYRKVVILGYRCVGKTSLAHQFVEGEFSEGYDPTVENTYS KIVTLGKDEFHLHLVDTAGQDEYSILPYSFIIGVHGYVLVYSV TSLHSFQVIESLYQKLHEGHGK
693	1432	130	1671	SSPSRELCFYGFWIASSWWSRWVGSLGPGILPSPPARGRTFAS VSRLPPPWSAGITLTPFLICQSGSVCPGLGAGFGVRSFHHPVA RSAVLLLPLAPAAAQDSTQASTPGSPLSPTEYERFFALLTPTW KAETTCRLRATHGCRNPTLVQLDQYENHGLVPDGAVCSNLPYA SWFESFCQFTHYRCSNHVYYAKRVLCSQPVSILSPNTLKEIEA SAEVSPTTMTSPISPHFTVTERQTFQPWPERLSNNVEELLQSS LSLGGQEQAPEHKQEQGVEHRQEPTQEHKQEEGQKQEEQEEEQ EEEGKQEEGQGTKEGREAVSQLQTDSEPKFHSESLSSNPSSFA PRVREVESTPMIMENIQELIRSAQEIDEMNEIYDENSYWRNQN PGSLLQLPHTEALLVLCYSIVENTCIITPTAKAWKYMEEEILG FGKSVCDSLGRRHMSTCALCDFCSLKLEQCHSEASLQRQQCDT SHKTPFVSPLLASQSLSIGNQVGSPESGRFYGLDLYGGLHM
694	1433	517	578	VSWVPSKDGDVEGARRPFTRLNTSLGPGLQEGRRRTWLVPIPG AVLPGRTQEQPRASPLY*PGAPPCQPQGLVAGPWAQ*AGLRSD GFGPWPW\RLVGTAGPREKKVQKSKCWHFRCGRHPARRSGWAG RHASLLATGRPCSSAPSQQPLGTAGDSRQELLRPPLV*VNGAQ SSAAGDWGSSPRTAQALARPHRLGHHPAAVAPAARLRTQSGHS PRGPLCRSPGSPRRMGTWRGPAGHSHD
695	1434	249	632	KTVAEEASVGNPEGAFMKMLQARKQHMSTELTIESEAPSDSSG INLSGFGSEQLDTNDESDVSSALSYILPYLSLRNLGAESILLP FTEQLFSNVQDGDRLLSILKNNRKSPSQSSLLGNKFKNKIF
696	1435	333	881	GECFIMAAVVQQNDLVFEFASNVMEDERQLGDPAIFPAVIVEH VPGADILNSYAGLACVEEPNDMITESSLDVAEEEIIDDDDDDI TLTVEASCHDGDETIETIEAAEALLNMDSPGPMLDEKRINNNI FSSPEDDMVVAPVTHVSVTLDGIPEVMETQQVQEKYADSPGAS SPEQPKRKKK

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697	1436	3	466	HEASGVSRALLQSAPGTPATVGISVGELWPFARCCSHSYVRSL RGLSVSTHLLCFTIYIMNPSMKQKQEEIKENIKTSSVPRRTLK MIQPSASGSLVGRENELSAGLSKRKHRNDHLTSTTSSPGVIVP ESSENKNLGGVTQESFDLMIKGMKK
698	1437	50	241	PLPARGKSTLPATFCSPSAPELASMSVVPPNRSQTGWPRGVTQ FGNKYIQQTKPLTLERTINL
699	1438	1	422	AEGEDVPPLPTSSGDGWEKDLEEALEAGGCDLETLRNIIQGRP LPADLRAKVWKIALNVAGKGDSLASWDGILDLPEQNTIHKDCL QFIDQLSVPEEKAAELLLDIESVITFYCKSRNIKYSTSLSWIH LLKPLVHLQLP
700	1439	161	413	ALPKFLTHGVKSNERVVVWLFPPSFRAATMVHMNVLPDALKSI NNAERRGKPQVLIRLCSKIIIWFLTVMVKYGYIGKFEPTRP
701	1440	211	977	AMAQYGHPSPLGMAAREELYSKVTPRRNRQQRPGTIKHGSALD VLLSMGFPRARAQKALASTGGRSVQAACDWLFSHVGDPFLDDP LPREYVLYLRPTGPLAQKLSDFWQQSKQICGKNKAHNIFPHIT LCQFFMCEDSKVDALGEALQTTVSRWKCKFSAPLPLELYTSSN FIGLFVKEDSAEVLKKFAADFAAEAASKTEVHVEPHKKQLHVT LAYHFQASHLPTLEKLAQNIDVKLGCDWVATIFSRDIRFA
702	1441	3	408	QTRPASPRTARESVLGVSQNMSFNLQSSKKLFIFLGKSLFSLL EAMIFALLPKPRKNVAGEIVLITGAGSGLGRLLALQFARLGSV LVLWDINKEGNEETCKMAREAGATRVHAYTCDCSQKEGVYRVA DQVKK
703	1442	708	244	MVARKGQKSPRFRRVTCFLRLGRSTLLELEPAGRPCSGRTRHR ALHRRLVACVTVSSRRHRKEAGRGRAESFIAVGMAAPSMKERQ VCWGARDEYWKCLDENLEDASQCKKLRSSFESSCPQQWIKYFD KRRDYLKFKEKFEAGQFEPSETTAKS
704	1443	3	475	PAPAARSRELLKELRNGQDMDTVVFEDVVVDFTLEEWALLNPA QRKLYRDVMLETFKHLASVDNEAQLKASGSISQQDTSGEKLSL KQKIEKFTRKNIWASLLGKNWEEHSVKDKHNTKERHLSRNPRV ERPCKSSKGNKRGRTFRKTRNCNRHLRR
705	1444	276	437	CVCGFFVCFETKSCFVAQAGVQWHNLSSLQALPPGFKQFSCLS LLSSWHYRRV
706	1445	2	322	GTRLRRRREAVWFEVVNMDFSRLHMYSPPQCVPENTGYTYALS SSYSSDALDFETEHKLDPVFDSPRMSRRSLRLATTACTLGDGE AVGADSGTSSAVSLKNRAAR
707	1446	123	410	DTMQAVVPLNKMTAISPEPQTLASTEQNEVPRVVTSGEQEAIL RGNAADAESFRQRFRWFCYSEVAGPRKALSQLWELCNQWLRPD IHTKE\QILE
708	1447	2	384	PICLFSRPTLRPSRSKVSLIEGRGANMAARWRFWCVSVTMVVA LLIVCDVPSASAQRKKEMVLSEKVSQLMEWTNKRPVIRMNGDK FRRLVKAPPRNYSVIVMFTALQLHRQCVVCKYELQLRFKIK

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709	1448	104	535	QMRVKDPTKALPEKAKRSKRPTVPHDEDSSDDIAVGLTCQHVS HAISVNHVKRAIAENLWSVCSECLKERRFYDGQLVLTSDIWLC LKCGFQGCGKNSESQHSLKHFKSSRTEPHCIIINLSTWIIWWY EWDEKIFTPLNKKG
710	1449	116	479	AKERGEERQGEGGGWLSGSRWPLVRSAFVPAPSSLILSMCLSP GIPEAAPDSPLTASAPTP*VMLLGDTGVGKTCFLIQFKDGAFL SGTFIATVGIDFRVRWLQALASSREPGLWLRHGGV
711	1450	2	232	FYPRSSADLPFQTTRCEFQTSVMELAHSLLLNEEALAQITEAK RPVFIFEWLRFLDKVLVAANKVWYCSFFPVALT
712	1451	105	393	MNMKQKSVYQQTKALLCKNFLKKWRMKRESLLEWGLSILLGLC IALFSSSMRNVQFPGMAPQNLGRVDKFNSSSLMVVYTPISNLT QQIMNKTAL
713	1452	2	525	SPQGNGCPDVTGDSVIRVPLTLLVHNLAGLTGLLHHCLSGPLP APSPPPAMSSSRKDHLGASSSEPLPVIIVGNGPSGICLSYLLS GYTPYTKPDAIHPHPLLQRKLTEAPGVSILDQDLDYLSEGLEG RSQSPVALLFDALLRPDTDFGGNMKSVLTWKHRKEHAIPHVVL GR
714	1453	2	1557	NRRTRAQRCQRGRSCGAREEEVEPGTARPPPAASAMDASLEKI ADPTLAEMGKNLKEAVKMLEDSQRRTEEENGKKLISGDIPGPL QGSGQDMVSILQLVQNLMHGDEDEEPQSPRIQNIGEQGHMALL GHSLGAYISTLDKEKLRKLTTRILSDTTLWLCRIFRYENGCAY FHEEEREGLAKICRLAIHSRYEDFVVDGFNVLYNKKPVIYLSA AARPGLGQYLCNQLGLPFPCLCRVPCNTVFGSQHQMDVAFLEK LIKDDIERGRLPLLLVANAGTAAVGHTDKIGRLKELCEQYGIW LHVEGVNLATLALGYVSSSVLAAAKCDSMTMTPGPWLGLPAVP AVTLYKHDDPALTLVAGLTSNKPTDKLRALPLWLSLQYLGLDG FVERIKHACQLSQRLQESLKKVNYIKILVEDELSSPVVVFRFF QELPGSDPVFKAVPVPNMTPSGVGRERHSCDALNRWLGEQLKQ LVPASGLTVMDLEAEGTCLRFSPLMTAAGKPGLVDIPCFCSGA AG
715	1454	319	873	LCIMDTKEEKKERKQSYFARLKKKKQAKQNAETASAVATRTHT GKEDNNTVVLEPDKCNIAVEEEYMTDEKKKRKSNQLKEIRRTE LKRYYSIDDNQNKTHDKKEKKMVVQKPHGTMEYTAGNQDTLNS IALKFNITPNKLVELNKLFTHTIVPGQVLFVPDANSPSSTLRL SSSSPGATVSPSS
716	1455	60	681	SAGGDSCRAVPMLRFPTCFPSFRVVGEKQLPQEIIFLVWSPKR DLIALANTAGEVLLHRLASFHRVWSFPPNENTGKEVTCLAWRP DGKLLAFALADTKKIVLCDVEKPESLHSFSVEAPVSCMHWMEV TVESSVLTSFYNAEDESNLLLPKLPTLPKNYSNTSKIFSEENS DEIIKLLGDVRLNILVLGGSSGFIELYAYGMFKI
717	1456	357	658	PRDPVTDRARAMPRRGLVAGPDLEYFQRHYFTPAEVAQHNRPE DLWVSYLGRVYDLTSLAQEYKGNLLLKPIVEVAGQDISHWFDP KTRDVSYAGTWDCG

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718	1457	2	481	RIPGRRFRAAFVLGSANVASSVRLRCSFPLSLGGPSGPAAASV ALGPAGPGRSLGRTPDTGDWEMDSVSFEDVAVAFTQEEWALLD PSQKNLYRDVMQEIFRNLASVGNKSEDQNIQDDFKNPGRNLSS HVVERLFEIKEGSQYGETFSQDSNLNLNKI
719	1458	6	469	SLSLSVSPFLRLSLGRVGGMAEEMESSLEASFSSSGAVSGASG FLPPARSRIFKIIVIGDSNVGKTCLTYRFCAGRFPDRTEATIG VDFRERAVEIDGERIKIQLWDTAGQERFRKSMVQHYYRNVHAV VFVYDMTNMASFHSLPSWIEECKQH
720	1459	82	490	RRPSPGSIVIMAAESDVLHFQFEQQGDVVLQKMNLLRQQNLFC DVSIYINDTEFQGHKVILAACSTFMRDQFLLTQSKHVRITILQ SAEVGRKLLLSCYTGALEVKRKELLKYLTAASYLQMVHIAEKR TEAFVKF
721	1460	48	708	AEGLQSAAGIRIDTKAGPPEMLKPLWKAAVAPTWPCSMPPRRP WDRQAGTLQVLGALAVLWLGSVALICLLWQVPRPPTWGQVQPK DVPRSWEHGSSPAWEPLEAEARQQRDSCQLVLVESIPQDLPSA AGSPSAQPLGQAWLQLLDTAQESVHVASYYWSLTGPDIGVNDS SSQLGEALLQKLQQLLGRNISLAVATSSPTLARTSTDLQVLAA RGAH
722	1461	436	677	RKKKMPLPFGLKLKRTRRYTVSSKSCLVARIQLLNNEFVEFTL SVESTGQESLEAVAQRLELREVTYFSLWYYNKQNQRR
723	1462	45	569	LQPLSSWESASEVTRSPVSPEDVKQATSNFENLQKQLARKMKL PIFIADAFTARAFRGNPAAVCLLENELDEDMHQKIAREMNLSE TAFIRKLHPTDNFAQSSCFGLRWFTPASEVPLCGHATLASAAV LFHKIKNMNSTLTFVTLSGELRARRAEDGIVLDLPLYPAHPQD FHE*
724	1463	79	530	AADTMQSDDVIWDTLGNKQFCSFKIRTKTQSFCRNEYSLTGLC NRSSCPLANSQYATIKEEKGQCYLYMKVIERAAFPRRLWERVR LSKNYEKALEQIDENLIYWPRFIRHKCKQRFTKITQYLIRIRK LTLKRQRKLVPLSKKVERREK
725	1464	2	261	FVERGLGDPALPTLMFEEPEWAEAAPVAAGLGPVISRPPPAAS SQNKVSDSREQWELFQAAKRTLVDPSAVCIAGRDTCGTVKGES
726	1465	1	860	VVEFLWSRRPSGSSDPRPRRPASKCQMMEERANLMHMMKLSIK VLLQSALSLGRSLDADHAPLQQFFVVMEHCLKHGLKVKKSFIG QNKSFFGPLELVEKLCPEASDIATSVRNLPELKTAVGRGRAWL YLALMQKKLADYLKVLIDNKHLLSEFYEPEALMMEEEGMVIVG LLVGLNVLDANL\CLKGEDLDSQVGVIDFSLYLKDVQDLDGGK EHERITDVLDQKNYVEELNRHLSCTVGDLQTKIDGLEKTNSKL QERVSAATDRICSLQEEQQQLREQNELIR
727	1466	69	452	GCYAPSPHLGGSLTPRFFPNGVFHRRLPRPRPPQPPSVSSAPT LRPLCAHFSLGKLRLRVRKSAEVAPPRTEKGWGSAEPRHSRAP LGLQGLRMAASAQVSVTFEDVAVTFTQEEWGQLDAAQRTLY

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728	1467	1	439	FRGSLSSPSSLRGRRLVTGQTSPRGTWCLYPGFCRSVACAMPC CSHRSCREDPGTSESREMDPVVFEDVAVNFTQEEWTLLDISQK NLFREVMLETFRNLTSIGKKWSDQNIEYEYQNPRRSFRSLIEE KVNEIKEDSHCGETFTQ
729	1468	103	236	LNFANSAAFAVTMPQNEYIELHRKRYGFRLDYHEKKRKKQSRE A
730	1469	213	809	SGDLSPAELMMLTIGDVIKQLIEAHEQGKDIDLNKVKTKTAAK YGLSAQPRLVDIIAAVPPQYRKVLMPKLKAKPIRTASGIAVVA VMCKPHRCPHISFTGNICVYCPGGPDSDFEYSTQSYTGYEPTS MRAIRARYDPFLQTRHRIEQLKQLGHSVDKVEFIEMGGTFMAL PEEYRDYFIRNLHDALSGHTSNNIYE
731	1470	264	799	WESDVGEGLRPPPPPPPPPGRRRTQEPRARDAATVIFACPAALL ETLIAYGSSSPSFCKHRAARPLIFLLHRLTAEATARCPICALE ARNPGRWGICASWPGMKTPFGKAAAGQRSRTGAGHGSVSVTMI KRKAAHKKHRSRPTSQPRGNIVGCIIQHGWKDGDEPLTQWKGT VLDQLL
732	1471	2	763	RDLGVALEAFQWARAGDCGSGAGRAGGEGVDAGRRVPERQHRG RGGGGEPGRRQRGGRRQ\RSSSRRSGGDGGDEVEGSGVGAGEG ETVQHFPLARPKSLMQKLQCSFQTSWLKDFPWLRYSKDTGLMS CGWCQKTPADGGSVDLPPVGHDELSRGTRNYKKTLLLRHHVST EHKLHEANAQESEIPSEEGYCDFNSRPNENSYCYQLLRQLNEQ RKKGILCDVSIVVSGKIFKAHKNILVAGSRFFKTLYCFS
733	1472	82	523	SLRAAAAMADVTARSLQYEYKANSNLVLQADRSLIDRTRRDEP TGEVLSLVGKLEGTRMGDKAQRTKPQMQEERRAKRRKRDEDRH DINKMKGYTLLSEGIDEMVGIIYKPKTKETRETYEVLLSFIQA ALGDQPRDILCGAADEVL
734	1473	536	110	CNSAESRMDVLFVAIFAVPLILGQEYEDEERLGEDEYYQVVYY YTVTPSYDDFSADFTIDYSIFESEDRLNRLDKDITEAIETTIS LETARADHPKPVTVKPVTTEPQSP\DL\NDAVSS\LRSPIPL\ LLS\CAFVQVGMYFM
735	1474	2	557	FVRGPGEEQAPAFRKPAPGAMGAQVRLPPGEPCREGYVLSLVC PNSSQAWCEITNVSQLLASPVLYTDLNYSINNLSISANVENKY SLYVGLVLAVSSSIFIGSSFILKKKGLLQLASKGFTRAGQGGH SYLKEWLWWVGLLSILSWNAREKVDL*NITF*PQTSCIFFTIT IEKSTFLSYFPTS
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SEQ ID NO: of Nucleic Acids	SEQ ID NO: of Amino Acids	Predicted beginning nucleotide location corresponding to first amino acid residue of amino acid sequence	Predicted end nucleotide location corresponding to first amino acid residue of amino acid sequence	Amino acid segment containing signal peptide (A = Alanine, C = Cysteine, D = Aspartic Acid, E = Glutamic Acid, F = Phenylalanine, G = Glycine, H = Histidine, I = Isoleucine, K = Lysine, L = Leucine, M = Methionine, N = Asparagine, P = Proline, Q = Glutamine, R = Arginine, S = Serine, T = Threonine, V = Valine, W = Tryptophan, Y = Tyrosine, X = Unknown, * = Stop Codon, / = possible nucleotide deletion, \ = possible nucleotide insertion)
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WHAT IS CLAIMED IS:

1.   An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of SEQ ID NO: 1-739, a mature protein coding portion of SEQ ID NO:1-739, an active domain of SEQ ID NO: 1-739, and complementary sequences thereof.

2.   An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide hybridizes to the polynucleotide of claim 1 under stringent hybridization conditions.

3.   An isolated polynucleotide encoding a polypeptide with biological activity, wherein said polynucleotide has greater than about 90% sequence identity with the polynucleotide of claim 1.

4.   The polynucleotide of claim 1 wherein said polynucleotide is DNA.

5.   An isolated polynucleotide of claim 1 wherein said polynucleotide comprises the complementary sequences.

6.   A vector comprising the polynucleotide of claim 1.

7.   An expression vector comprising the polynucleotide of claim 1.

8.   A host cell genetically engineered to comprise the polynucleotide of claim 1.

9.   A host cell genetically engineered to comprise the polynucleotide of claim 1 operatively associated with a regulatory sequence that modulates expression of the polynucleotide in the host cell.

10.   An isolated polypeptide, wherein the polypeptide is selected from the group consisting of:

(a)   a polypeptide encoded by any one of the polynucleotides of claim 1; and

(b)   a polypeptide encoded by a polynucleotide hybridizing under stringent conditions with any one of SEQ ID NO:1-739.

11.   A composition comprising the polypeptide of claim 10 and a carrier.

12.   An antibody directed against the polypeptide of claim 10.

13.   A method for detecting the polynucleotide of claim 1 in a sample, comprising:

a)   contacting the sample with a compound that binds to and forms a complex with the polynucleotide of claim 1 for a period sufficient to form the complex; and

b)   detecting the complex, so that if a complex is detected, the polynucleotide of claim 1 is detected.

14.   A method for detecting the polynucleotide of claim 1 in a sample, comprising:

a)   contacting the sample under stringent hybridization conditions with nucleic acid primers that anneal to the polynucleotide of claim 1 under such conditions;

b)   amplifying a product comprising at least a portion of the polynucleotide of claim 1; and

c)   detecting said product and thereby the polynucleotide of claim 1 in the sample.

15.   The method of claim 14, wherein the polynucleotide is an RNA molecule and the method further comprises reverse transcribing an annealed RNA molecule into a cDNA polynucleotide.

16.   A method for detecting the polypeptide of claim 10 in a sample, comprising:

a)   contacting the sample with a compound that binds to and forms a complex with the polypeptide under conditions and for a period sufficient to form the complex; and

b)   detecting formation of the complex, so that if a complex formation is detected, the polypeptide of claim 10 is detected.

17.   A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a)   contacting the compound with the polypeptide of claim 10 under conditions sufficient to form a polypeptide/compound complex; and

b)   detecting the complex, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

18.   A method for identifying a compound that binds to the polypeptide of claim 10, comprising:

a)   contacting the compound with the polypeptide of claim 10, in a cell, under conditions sufficient to form a polypeptide/compound complex, wherein the complex drives expression of a reporter gene sequence in the cell; and

b)   detecting the complex by detecting reporter gene sequence expression, so that if the polypeptide/compound complex is detected, a compound that binds to the polypeptide of claim 10 is identified.

19.   A method of producing the polypeptide of claim 10, comprising,

a)   culturing a host cell comprising a polynucleotide sequence selected from the group consisting of a polynucleotide sequence of SEQ ID NO: 1-739, a mature protein coding portion of SEQ ID NO: 1-739, an active domain of SEQ ID NO: 1-739, complementary sequences thereof and a polynucleotide sequence hybridizing under stringent conditions to SEQ ID NO: 1-739, under conditions sufficient to express the polypeptide in said cell; and

b)   isolating the polypeptide from the cell culture or cells of step (a).

20.   An isolated polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 740-1478, the mature protein portion thereof, or the active domain thereof.

21.   The polypeptide of claim 20 wherein the polypeptide is provided on a polypeptide array.

22.   A collection of polynucleotides, wherein the collection comprises the sequence information of at least one of SEQ ID NO: 1-739.

23.   The collection of claim 22, wherein the collection is provided on a nucleic acid array.

24.   The collection of claim 23, wherein the array detects full-matches to any one of the polynucleotides in the collection.

25.   The collection of claim 23, wherein the array detects mismatches to any one of the polynucleotides in the collection.

26.   The collection of claim 22, wherein the collection is provided in a computer-readable format.

27.   A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

28.   A method of treatment comprising administering to a mammalian subject in need thereof a therapeutic amount of a composition comprising an antibody that specifically binds to a polypeptide of claim 10 or 20 and a pharmaceutically acceptable carrier.

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cctaccctcc ttccccaccc ccaccacacc cgctcaccag ctcggctact gctcgctccg       180
gctgccgccg ccgccgccgc cgacgccacc accactgctt cctctgctgc ggggccacag       240
ccttgagtgt cattcaaggg acagcacaac ctcatccaag ctctcctacc tctgcccagc       300
cgtgcctctc atcctcccca ttcctcgtcc acactccatc caaagaagag ggaaagcacc       360
gaatagaggg gggcgaaggc aaagtctgct gttcttcccc ctgggccccc ttgctcctcc       420
atcctcattc tctcaccacc agcccccccta accccaagga gcccaggaac tgaggcgact       480
cgccccactg ccatgtccaa aagcttgaaa aagaaaagcc actggactag caaagtccat       540
gagagtgtca ttggcaggaa cccggagggc cagctgggct ttgaactgaa ggggggcgcc       600
gagaatggac agttccccta cctggggggag gtgaagcccg caaggtggc ctatgagagc       660
ggcagcaaat tggtgtcgga ggagctgctg ctggaggtga cgagacccc cgtggcgggg       720
ctcaccatca gggacgtgct ggccgtgatc aaacactgca aggacccccct ccggctcaag       780
tgtgtcaagc aaggtgagag cagcggcttg ctcagtgttt tgccggcgg tgggaccgct       840
cggggcgcag ggcaatgaaa gggtggccgc gcatgttgaa gggggtgtgt gcgcgatga       900
tggggtgggg ccagagagc acccgcagtg caagtgagtt cgccggggga ttcgacgaaa       960
tcgtnncccg ggaattccgg ac                                           982
```

```
    <210> 13
    <211> 440
    <212> DNA
    <213> Homo sapiens
```

<400> 13
ccgtgccgga attcccgcgt cgacgatttc gtggctaagg cgccaggcac gggcaccacc   60
agggcgccca ggagccgccc gccgccggca tggaccagct gtactgccca ccgagcgcgt   120
gccagtcttt tggtaagaac tagtcacaca gacctcaacc tgatgcgtgg agacaaggaa   180
atgctttttca gtgtgtccag aaagagaaaa tgcaggtgtc ttctgcggag gtgcgcatcg   240
ggcccatgag actgacgcag gaccctattc aggttttgct gatctttgca aaggaagata   300
gtcagagcga tggcttctgg tgggcctgcg acagagctgg ttatagatgc aatattgctc   360
ggactccaga gtcagccctt gaatgctttc ttgataagca tcatgaaatt attgtaattg   ·420
atcatagaca aactcagaac   440

        <210> 14
        <211> 581
        <212> DNA
        <213> Homo sapiens

        <400> 14
tttcgtttgg ccggctgcgg gcacctcctg gtctcgctgc tggggctgct gctgctgctg   60
gcgcgctccg gcacccgggc gctggtctgc ctgccctgtg acgagtccaa gtgcgaggag   120
cccaggaact gcccggggag catcgtgcag ggcgtctgcg gctgctgcta cacgtgcgcc   180
agccagagga acgagagctg cggcggcacc ttcgggattt acggaacctg cgaccggggg   240
ctgcgttgtg tcatccgccc cccgctcaat ggcgactccc tcaccgagta cgaagcgggc   300
gtttgcgaag atgagaactg gactgatgac caactgcttg gttttaaacc atgcaatgaa   360
aaccttattg ctggctgcaa tataatcaat gggaaatgtg. aatgtaacac cattcgaacc   420
tgcagcaatc cctttgagtt tccaagtcag gatatgtgcc tttcagcttt aaagagaatt   480
gaagaagaga agccagattg ctccaaggcc cgctgtgaag tccagttctc tccacgttgt   540
cctgaagatt ctgttctgat cgagggttat gctcctcctg g   581

        <210> 15
        <211> 693
        <212> DNA
        <213> Homo sapiens

        <400> 15
tttcgtatgg cggccaatgt gggatcgatg tttcaatatt ggaagcgctt tgatttacag   60
cagctgcaga gagaactcga tgccaccgca acggtattgg cgaaccggca ggatgaaagt   120
gagcagtcca gaaagcggct tatcgaacag agccgggagt tcaagaagaa cactccagag   180
gtgaggcgcg tgaccatcgt gttcgctttg aagggatctt agaatgctgg tgcatgttca   240
ggcgacgctc cgtgagcgtt tcattttcat cagatgaacg cacggccggc aaacaacccg   300
tttctttccc cagatgtctt cagccccatt t.ccagcagaa cgcatgccat cctgcaggct   360
gtggggatgt ggaaattgat aggttgtctg gaaatatgaa agtcagagcc aattccaggt   420
gcagatactg gacaagcttg gtctgtaaga acacgtgggc aggtgtgtgg gtgtctcaaa   480
ccctcgagct catcccagac cctgtcccat gtcagttagc aagccaccaa agtccataag   540
ggatcctgtg gggtggaagg tccgcggggc ctgcttccct gttgctggtg caggcggagt   600
gtctgaaggc tgcacgcatc tgggcatagc agtgcgccta acgcttcttg taaaacagac   660

atttcgcctg ctaagccttt taaatgcctc tct   693

```
            <210> 16
            <211> 562
            <212> DNA
            <213> Homo sapiens




            <400> 16
            tttcgtggaa agagagaaac caccgctgcg ggtgggtaga gaagcacttg gcgcctcggg      60
            gaggggaccg cgcccgcctc atttgcgcct tgcagcactg ctggaccagg ttacaagatg     120
            ttcacctaag attgagacct agtgactaca tttcctacgg gaacaaataa atggtttttc     180
            atctcccgga gatacattac aaacaaatat ggtgctaaaa gaactcctta cctttctctg     240
            actacaattt atttggacat acttttgtat tgaagagagg tatacatact gaagctactt     300
            gctgtactat aggagactct gtcctgtagg atcatggacc atcctagtag ggaaaaggat     360
            gaaagacaac ggacaactaa acccatggca caaggagtg cacactgctc tcgaccatct      420
            ggctcctcat cgtcctctgg ggttcttatg gtgggaccca acttcagggt tggcaagaag     480
            ataggatgtg ggaacttcgg agagctcaga ttaggtgaag gtctcccaca ggtgtattac     540
            tttggaccat gtgggaaata ta                                              562




            <210> 17
            <211> 899
            <212> DNA
            <213> Homo sapiens




            <400> 17
            tttcgtgcgt ccccggccca accatggcgt cctccgcggc cggctgcgtg gtgatcgttg      60
            gcaggaagtc tgaaacagca gttggagtgt agtggttaag aggaaggact caggagtcag     120
            attgcttggc ttcatctcat agatccataa cttatcaccc ttgtggactt aattcctcca     180
            tgcctcagtt tatcacttat gtaggcttaa ttcctccatg cctcagtttc cctacatata     240
            aaatggaaat actaataaca cttatcttgt agggttgttg taaagattaa catagtggag     300
            tcattgggcg aagctgggcc atgctgtttg ccagtggagg cttccaggtg aaactctatg     360
            acattgagca acagcagata aggaatgccc tggaaaacat caggtgggcc agccggcgct     420
            ctccagaagg aatggaagtg ggtctgtttc tctcagttgg tcttgtttgt catatcctca     480
            aggctatgag gatctgtgat gtcacatttt cgtctgatgg ctactgcagt gcctctgagt     540
            tggtaaaggc caggcctaca gtggctggaa tgtgaattca cactggggaa gggctcccat     600
            gggggaggaa acgacccttc ttgctaagag gatctgcatc aagcgtgagt gactttgcag     660
            gcttctccag ctgtttgccc cggggctgga gggctggggt ttcctgcttc catctaggca     720
            ggaggaactc gcttccagca tgtgacagcc atagctgcag gggcattaca gtttaagaac     780
            agaggtcctg cagcttgttt tgacctgttg atctagtaat ggtaggaccc aaatgaaaac     840
            atcttgaatt ttagttagag gtttagcact catgtgagag gacagaactg gagctgttt      899




            <210> 18
            <211> 519
            <212> DNA
```

8

<213> Homo sapiens

<400> 18
ggaattcccg ggtcgacgat ttcgtctccg cccgcccgaa gccgcgccca ctgcccagag   60
ccagagggat ggtggtagtc acggggcggg agccagacag ccgtcgtcag gacggtgcca   120
tgtccagctc tgacgccgaa gacgactttc tggagccggc cacgccgacg gccacgcagg   180
cggggcacgc gctgccccctg ctgccacagg agtttcctga ggttgttccc cttaacatcg   240
gaggggctca cttcactaca cgcctgtcca cactgcggtg ctacgaagac accatgttgg   300
cagccatgtt cagtgggcgg cactacatcc ccacggactc cgagggccgg tacttcatcg   360
accgagatgg cacacacttt ggagatgtgc tgaatttcct cgcgctcaggg gacctcccac   420
ccagggagcg tgttcgagct gtgtacaaag aggcccagta ctatgccatc gggcccctcc   480
tggagcagct ggagaacatg ccgccactga aaggcgaga   519

        <210> 19
        <211> 460
        <212> DNA
        <213> Homo sapiens

        <400> 19
tttcgtgcag gggccaggcc tctctaggct ctccggctga gccgggttgg ggcccgggtt   60
gggccgcccg gggactctgg agcattggga tttgtagcgc gccctctggg taggcggctg   120
tagcggagag gcgtgcggga tcgggatgtc ggggctgctc acggacccgg agcagagagc   180
gcaggagccg cggtaccccg gcttcgtgct ggggctggat gtgggcagtt ctgtgatccg   240
ctgccacgtc tatgaccggg cggcgcgggt ctgcggctcc agcgtgcaga aggtagaaaa   300
tctttatcct caaattggct gggtagaaat tgatcctgat gttctttgga ttcaatttgt   360
tgccgtaata aaagaagcag tcaaagctgc aggaatacag atgaatcaaa ttgttggtct   420
tggcatttca acacagagag caacttttat tacgtggaac   460

        <210> 20
        <211> 731
        <212> DNA
        <213> Homo sapiens

        <400> 20
gagatcaagg agggctcaga agaggcgatg tctgatctgt cctccaggca gcaaaggaaa   60
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atgcaatttg tgaagctgtg gtgtggctgc agtggagagt tcccaacaag gctacgcaga   180
agaacccct tgactgaagc aatggagggg ggtccagctg tctgctgcca ggatcctcgg   240
gcagagctgg tagaacgggt ggcagccatc gatgtgactc acttggagga ggcagatggt   300
ggcccagagc ctactagaaa cggtgtggac ccccaccac gggccagagc tgcctctgtg   360
atccctggca gtacttcaag actgctccca gccggccta gcctctcagc caggaagctt   420
tccctacagg agcggccagc aggaagctat ctggaggcgc aggctgggcc ttatgccacg   480
gggcctgcca gccacatctc ccccggggcc tggcggaggc ccaccatcga gtcccaccac   540
gtggccatct cagatgcaga ggactgcgtg cagctgaacc agtacaagct gcagagtgag   600

9

```
attggcaagg gtgcctacgg tgtggtgagg ctggcctaca acgaaagtga agacagacac    660
tatgcaatga aagtcctttc caaaaagaag ttactgaagc agtatggctt tccacgtcgc    720
cctcccccga a                                                        731
```


```
            <210> 21
            <211> 519
            <212> DNA
            <213> Homo sapiens
```


```
            <400> 21
tttcgtttat gggaagccag taacactgtg gcctactatc tcttccgtgg tgccatctac     60
attttttggga ctcgggaatt atgaggtaga ggtggaggcg gagccggatg tcagaggtcc    120
tgaaatagtc accatggggg aaaatgatcc gcctgctgtt gaagcccct tctcattccg      180
atcgctttt ggccttgatg atttgaaaat aagtcctgtt gcaccagatg cagatgctgt      240
tgctgcacag atcctgtcac tgctgccatt gaagtttttt ccaatcatcg tcattgggat     300
cattgcattg atattagcac tggccattgg tctgggcatc cacttcgact gctcagggaa     360
gtacagatgt cgctcatcct ttaagtgtat cgagctgata gctcgatgtg acggagtctc     420
ggattgcaaa gacggggagg acgagtaccg ctgtgtccgg gtgggtggtc agaatgccgc     480
gctccaggtg ttcacagctg cttcgcggaa gaccatgtg                           519
```


```
            <210> 22
            <211> 544
            <212> DNA
            <213> Homo sapiens
```


```
            <400> 22
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gctcggagcg gattctgccc gccgtccccg gagccctcgg cgccccgctg agcccgcgat      120
cacttcctcc ctgtgaccaa ccggcgctgc aggttagagc ctggcaatgc cgtttgggtg      180
tgtgactctg ggcgacaaga agaactataa ccagccatcg gaggtgactg acagatatga      240
tttgggacag gtcatcaaga ctgaggagtt ttgtgaaatc ttccgggcca aggacaagac      300
gacaggcaag ctgcacacct gcaagaagtt ccagaagcgg gacggccgca aggtgcggaa      360
agctgccaag aacgagatag gcatcctcaa gatggtgaag catcccaaca tcctacagct      420
ggtggatgtg tttgtgaccc gcaaggagta ctttatcttc ctggagctgt gagtgtgggt      480
ctggggaccc aaaattcccc agcgcccagg gctttcacct gtcccaccct ctgcagctaa      540
ggag                                                                 544
```


```
            <210> 23
            <211> 749
            <212> DNA
            <213> Homo sapiens
```

<400> 23
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cggaatgggg ggtgtggctg ctccgccagg gtccccaggg tgggagagcg gctccgcggc   120
caccgatgcc cggacccccт ctgtcttctg ctagacatgc tcttcctctc gtttcatgca   180
ggctcttggg aaagctggtg ctgctgctgc ctgattcccg ccgacagacc ttgggaccgg   240
ggccaacact ggcagctgga gatggcggac acgagatccg tgcacgagac taggtttgag   300
gcggccgtga aggtgatcca gagtttgccg aagaatggtt cattccagcc aacaaatgaa   360
atgatgctta aattttatag cttctataag caggcaactg aaggaccctg taaactttca   420
aggcctggat tttgggatcc tattggaaga tataaatggg atgcttggag ttcactgggt   480
gatatgacca agaggaagc catgattgca tatgttgaag aaatgaaaaa gattattgaa   540
actatgccaa tgactgagaa agttgaagaa ttgctgcgtg tcataggtcc attttatgaa   600
attgtcgagg acaaaaagag tggcaggagt tctgatataa cctcagatct tggtaatgtt   660
ctcacttcta ctccaaacgc caaaaccgtt aatggtaaag ctgaaagcag tgacagtgga   720
gccgagtctg aggaagaaga ggcgtgtgt   749

<210> 24
<211> 556
<212> DNA
<213> Homo sapiens

<400> 24
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gggctcgttg tgggcgccat ttctcggcgt ctaccgagga gccgcccctt tctcagcctt   120
gctcggctct tccccgctct ggtcgccggg gctgcgccgt ccccagctca gtgacaaaaa   180
tgctgagttt cttccgtaga acactagggc gtcggtctat gcgtaaacat gcagagaagg   240
aacgactccg agaagcacaa cgcgccgcca cacatattcc tgcagctgga gattctaagt   300
ccatcatcac gtgtcgggtg tcccttctgg atggtactga tgttagtgtg gacttgccaa   360
aaaaagccaa aggacaagag ttgtttgatc agattatgta ccacctggac ctgattgaaa   420
gcgactattt tggtctgaga tttatggatt cagcacaagt agcacattgg ttggatggta   480
caaaaagcat caaaaagcaa gtaaaaattg gttcacccta ttgtctgcat cttcgagtta   540
agttttattc ctcaga   556

<210> 25
<211> 422
<212> DNA
<213> Homo sapiens

<400> 25
gtcggtgaga atccagggag aggagcggaa acagaagagg ggcagaagac cggggcactt   60
gtgggttgca gagcccctca gccatgttgg gagccaagcc acactggcta ccaggtcccc   120
tacacagtcc cgggctgccc ttggttctgg tgcttctggc cctggggggcc gggtggggccc   180
aggaggggtc agagcccgtc ctgctggagg gggagtgcct ggtggtctgt gagcctggcc   240
gagctgctgc aggggggccc gggggagcag ccctgggaga ggcacccccт gggcgagtgg   300
catttgctgc ggtccgaagc caccaccatg agccagcagg ggaaaccggc aatggcacca   360
gtggggccat ctacttcgac caggtcctgg tgaacgaggg cggtggcttt gaccgggcct   420
ct   422

```
        <210> 26
        <211> 506
        <212> DNA
        <213> Homo sapiens



        <400> 26
agaagatgtg aagtcgtatt atacagtaca tctaccacaa ttagaaaata tcaatagtgg      60
tgaaaccaga acaatatctc actttcatta tactacttgg ccagattttg gagtccctca     120
atcaccagct tcatttctca atttcttgtt taaagtgaga gaatctggct ccttgaaccc     180
tgaccatgga cctgtggtga tccaccgtag tgcaggcact ggacgctcca gcaccttctc     240
tgtggtacac acttgtcttg ttttgatgga aaaaggagat gatattaaca ttaaacaagt     300
gttactgaac ataagaaaat tccaaatggg tcttatctca gaccccagat caactgagat     360
tctcatacat ggctataaca gaaggagcaa aatgtgtaaa gggagattct agtatacaga     420
aacgatggaa agaactttct aaggaagact ccctcctgct tttgatcatt caccaaacaa     480
aataatgact gaaaaataca atagga                                         506




        <210> 27
        <211> 850
        <212> DNA
        <213> Homo sapiens



        <400> 27
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ggctggtgtc ccggggctgg tgacttaaca ggcagagatg tggagaccag gtgcttgtgc     120
ccgggacggg cctggctgcc atcctgagga cactgcccat gttccatgac gaggagcacg     180
cccgagcccg cggcctctct gaggacaccc tggtgctacc cccggccagc cgcaaccaga     240
ggattctcta caccgtgctg gagtgccagc ccctcttcga ctccagtgac atgaccatcg     300
ctgagtgggt ttgccttgcc cagaccatca gaggcacta cgagcagtac cacggctttg      360
tggtcatcca cggcaccgac accatggcct ttgctgcctc gatgctgtcc ttcatgctgg     420
agaacctgca gaagactgtc atcctcactg gggcccaggt gcccatccat gccctgtgga     480
gcgacggccg tgagaacctg ctgggggcac tgctcatggc tggccagtat gtgatcccag     540
aggtctgcct tttcttccag aatcagctgt ttcggggcaa ccgggcaacc aaggtagacg     600
ctcggaggtt cgcagctttc tgctccccga acctgctgcc tctggccaca gtgggtgctg     660
acatcacaat caacagggag ctggtgcgga aggtggacgg gaaggctggg ctggtggtgc     720
acagcagcat ggagcaggac gtgggcctgc tgcgcctcta ccctgggatc cctgccgccc     780
tggttcgggc cttcttgcag cctcccctga agggcgtggt catggagacc ttcggttcag     840
ggaacggacc                                                          850




        <210> 28
        <211> 990
        <212> DNA
        <213> Homo sapiens
```

```
<400> 28
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tcaagctgaa gtggtctgct catagtttgt gtgccaggtt gctcatcagt attgatactg   180
tcccagaaca ggttgtaggt ataattcaga gactgtcctt tgcaaaggaa atgaccagca   240
tttcaactgt atgtcttcct ggaagggtag attctgctat atcttctttg tctgcatcaa   300
aagactcaag aggaatgtgg acacatttca tatcccattt gtagagtaaa gcttcaagtg   360
accagtcagc actcctaact tgataagtag accacaattg gaccttggga ttcttgtgca   420
tcaaaaaata tattgtagcc aaaatgtctt caaaatcttc tggttcaaag aacacatcag   480
atgcaaggat aatatcttgt ggtggtagag ccagaagatc ccaagatata tgaccccatg   540
ttagtcctac cacctgcaga tgtggcaggt tattcatttg gcagctttgc cgacagactt   600
ccagacagtg aggcagttct gagctgtctg acagtattac ttctgcacca catttggcag   660
ccaaaattcc tggaaggctc actccagctc caatctgcgg gacgtggacc tccaggacag   720
ccccgtcggc ccccggaccc ggctcctccg agaatcgaaa gcgctgggcc cggaccccct   780
gtcctcggaa atcgtgctcg cccagtaggg cgtcgttggg ccccgggcgg gcgggggacc   840
gcggaaggct ccgggctgcc agactgcgcg agcgggaagc cgcgggccac gtggccgtag   900
cacctgacgg caagaagggg aaagcccaga tctggtgata accctgccgc gctagcgagc   960
gaagaaagcc cggagcaagg cgaaagagac                                    990
```

```
<210> 29
<211> 622
<212> DNA
<213> Homo sapiens
```

```
<400> 29
tttttttttt ttgtgttgat aaagctttat ttataaacac actcacaggg ccagatttgg    60
gccacgggcc atagttgcca gcccggcttt aactgctggt cctcacgtta gtctcactgc   120
ctcctgcagg gtgggcatgt gggtgtcgtg ttcacccagc cccttcctcc accccacaaa   180
caccctggtg gctgtcctgg agcgcgacac actgggcatc cgtgaggtgc ggctgttcaa   240
tgccgttgtc cgctggtccg aggccgagtg tcagcggcag cagctgcagg tgacgccaga   300
gaacaggcgg aaggttctgg gcaaggccct gggcctcatt cgcttcccgc tcatgaccat   360
cgaggagttc gctgcaggta acagagctcg ggctcagggg ctggtttggg aggggagtgg   420
cacacaggtg ggcatctggg taccgaggat agtgcccccg agttcactgc ggaaagcctg   480
gcagatgcct ggcatataca gataggaaga aacctggctt gtgaggacgc gtccacaggg   540
ccatctgtta gccccggccc ggctctgtcc ccaccgtgca cactgccaga ccccgcctct   600
cgtgtctgtc cagctgtttt gg                                            622
```

```
<210> 30
<211> 181
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(181)
<223> n = a,t,c or g
```

<400> 30
ttttttttttt ttgagacgga gntgngctct gtnacccagg ntagagtgca atggcacgnt   60
ctcggctcac tgcaagctct gcgtcctggg ttgacgccat tctcctgcct cagcctcccg   120
agtagctggg actacaggag cttcgccacc aattccagcc tggggtggac agagtgataa   180
g   181

<210> 31
<211> 1956
<212> DNA
<213> Homo sapiens

<400> 31
aaactccgaa cacatccaaa catcagaagg aacaaactcc agacacaccg cctttaagaa   60
ctgttacgct caccgcgagg gtccacggct tcattctcca agtcagacca agaacccacc   120
aattccggac acaaaggcg tagcgtgcct cctgtgattg ttgaagagct gtggtgtgct   180
gctgagtggc gtgtgtattc catgtgaggg gaagggtcca acagtcctgg tcattcagac   240
tgcagttccc caggacagac ccacgaagtc aagcatgcgg agtgcagcca agccctggaa   300
cccagccatc agagcagggg gccacggccc agaccgggtg cggcctctgc ctgcagcctc   360
ttccggcatg aagagttcta agtcttcaac ttccttggct tttgagtccc gactcagcag   420
gctcaagagg gccagcagtg aggacacgct caacaagcca ggaagtaccg ctgcatcggg   480
ggtggttcgc ctgaagaaga ccgccactgc cggagccatc tcggagctca cggagagccg   540
cctgaggagc ggcacagggg cctttacaac aactaaacgg acaggcattc cagccccacg   600
ggaattttca gtaactgtct caagagagag gtctgtgcca cgtggtccct ccaacccccag   660
gaaatcagtg tccagtccaa cttcctccaa cactcccact cctacgaaac acctgaggac   720
cccttccaca aagcccaagc aagagaatga aggtggagaa aaggctgcgc ttgagtccca   780
agttcgggaa cttttggcag aagccaaagc aaaagatagt gaaattaaca ggcttcgaag   840
tgaactaaag aaatacaaag agaaaaggac tctgaacgct gaggggactg atgctttggg   900
cccaaatgtc gatggaacat cagtctcccc aggtgacacg gaacctatga taagagctct   960
tgaggagaag aacaagaact ttcagaaaga gctttccgat ctagaggaag aaaaccgggt   1020
cctgaaggag aaactgatct atcttgagca ctccccaaat tcagaagggg cagcaagtca   1080
cactggcgac agcagctgcc caacatccat aactcaagag tcaagcttcg gaagcccaac   1140
tggaaatcag ttgtccagtg acattgatga gtataaaaaa aacatacatg gaaatgcatt   1200
acggacatca ggctcctcaa gtagcgatgt taccaaagct tctttgtcgc cagatgcttc   1260
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ctttaagagt tcaaagtgtt ctactgctgg gagttcccca aacagcgtaa gtgaattgtc   1380
cctggcttcc ctcacagaga agatacaaaa gatggaagaa aaccaccata gcactgcaga   1440
agaactacag gctactctac aagaattatc agaccagcaa caaatggtac aggaattgac   1500
agctgaaaat gagaagctgg tggatgaaaa gacgatttta gagacatcct ttcatcagca   1560
tcgagagagg gcagagcagc taagtcaaga aaatgagaag ctgatgaatc tttttacaaga   1620
gcgagtaaag aatgaagagc ccaccactca ggaaggaaaa attattgaac tggagcagaa   1680
gtgcacaggt attcttgaac agggccgctt tgaaagagag aagctactca acattcagca   1740
gcagttgacc tgtagcttgc ggaaggttga ggaagaaaac caaggagctt tagaaatgat   1800
taaacgtctg aaggaagaaa atgaaaaact gaatgagttt ctagaactgg aacggcataa   1860
taataacatg atggccaaaa ctttggaaga gtgtagagtt accttggaag ggctaaaaat   1920
ggagaatgga tctttgaagt ctcatttgca gggtga   1956

<210> 32
<211> 513
<212> DNA

<213> Homo sapiens

<400> 32

```
ctcagcacca caaggaagtg cgggacccac acgcgctcgg aaagttcagc atgcatgaag        60
tttgggggaga gctcggcgat taacacagcg acccgggcca gcgcagggcg agcgcaggcg       120
gcgagagcgc agggcggcgc ggcgtcggtc ccgggagcag aacccggctt tttcttggag        180
cgacgctgtc tctagtcgct gatcccaaat gcaccggctc atctttgtct acactctaat        240
ctgcgcaaac ttttgcagct gtcgggacac ttctgcaacc ccgcagagcg catccatcaa        300
agctttgcgc aacgccaacc tcaggcgaga tgagagcaat cacctcacag acttgtaccg        360
aagagatgag accatccagg tgaaaggaaa cggctacgtg cagagtccta gattcccgaa        420
cagctacccc aggaacctgc tcctgacatg gcggcttcac tctcaggaga atacacggat        480
acagctagtg tttgacaatc agtttggatt aac                                     513
```

<210> 33
<211> 712
<212> DNA
<213> Homo sapiens

<400> 33

```
acagacatgg ttccagctct gtagaactga gagaaagaat aaacaagtca cacattagcc        60
cttcaaaaag atgaccgacc tcttgagaag tgttgtcacc gtaattgatg ttttctacaa       120
atacaccaag caagatgggg agtgtggcac actgagcaag ggtgaactaa aggaacttct       180
ggagaaagag cttcatccag ttctgaagaa cccagatgat ccagacacag tggatgtcat       240
catgcatatg ctggatcgag atcatgacag aagattggac tttactgagt ttctttttgat      300
gatattcaag ctgactatgg cctgcaacaa ggtcctcagc aaagaatact gcaaagcttc       360
agggtcaaag aagcataggc gtggtcaccg acaccaagaa gaagaaagtg aaacagaaga       420
ggatgaagag gatacaccag gacataaatc aggttacaga cattcaagtt ggagtgaggg       480
agaggagcat ggatatagtt ctgggcactc aaggggaact gtgaaatgta gacatgggtc       540
caactccagg aggctaggaa gacaaggtaa tttatccagc tctgggaacc aagagggatc       600
tcagaaaaga taccacaggt ccagctgtgg tcattcatgg agtggtggca aagacagaca       660
tggttccagc tctgtagaac tgagagaaag aataaacaag tcacacatta aa                712
```

<210> 34
<211> 600
<212> DNA
<213> Homo sapiens

<400> 34

```
cagatttctc aggtgagctc agatagcaat ccactgtgtt cctttatctc cagcagatat        60
atatcaatat cttgaagcag ttttctactc aatttagaag aacttctggt taaatttaca       120
attctttttt ctctcccatg cttgttgttt ctcattcaaa caagactggc atagctactt       180
tatgagggta ggtctccctg aattttaagt tccaaagatc tctggacctg atcatattga       240
ctttattccg tgggatcaac tcttcatggc cagttcttcc tctgtcactg agttcttagt       300
gctgggcttc tctagccttg gggaattgca gcttgtcctc tttgcagtct ttctctgcct       360
```

15

```
ctatttgatt atcttgagtg gaaacatcat catcatctca gtcattcatt tggatcacag   420
cctccacaca cccatgtact tctttctagg tattctttct atctctgaaa tcttctacac   480
aactgttatt ctgcccaaga tgcttatcaa cttattctct gtattcagga cactctcctt   540
tgtgagttgt gccacccaaa tgttctacga aatcgtcggc ccgggaactc aggaacggtc   600
```

```
        <210> 35
        <211> 985
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 35
tttcgtccta ctgtccctgt cctgcccttg cagacatgtg tcctgccctt gcagacagcc    60
gcaggcaggc agggaccacc atgagcaacc ccgtctctcc tcctgagggg cagcacagag   120
cctggaggag gcctgagtgg ggttgaggcc tggggcgagc tggggtggag gggcactggc   180
tgccgggctc cagggatctt ctccccttcc tgccccggag ggtgctggca caggggtggg   240
gctcactccc actccgtaga cacaatgatc agaggtcctg ggtgtctggg gaagctgggc   300
tgtgcgtgta tgcgtctacc atgtgggggt gcctgtgagt gtgctggggc gtctgcagtg   360
aaggcctcct gagaccactc cacggaaaca ccgggaatcc ctgcagctga gcctgtctct   420
cacgggaccg ggaagctgga gagagcccca accctgcccg ctggggccga gctccctgct   480
cctgcagcag tcccgtgccc cacactctga gtctgcccta tccacagctg ctgggcctct   540
ctgtggccac catggtgact cttacctact tcggggccca ctttgctgtc atccgccgag   600
cgtccctgga gaagaacccg taccaggctg tgcaccaatg ggggactcag cagcgactta   660
tccaacatcc agagagcggg agcgagggcc agagcctgct ggggccactc agggccttct   720
ctgcgggggtt gagcctggtg ggcctcctga ctctgggagc cgtgctgagc gctgcagcca   780
ccgtgaggga ggcccagggc ctcatggcag ggggcttcct gtgcttctcc ctggcgttct   840
gcgcacaggt gcaggtggtg ttctggagac tccacagccc cacccaggtg gaggacgcca   900
tgctggacac ctacgacctg gtatatgagc aggcgatgaa aggtacgtcc cacgtccggc   960
ggcaggagct ggcggccatc cagga                                        985
```

```
        <210> 36
        <211> 464
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 36
ccgtatcggc gtttatatac tgaagataag cctgatgagt aacaggcttg ctcgtcatac    60
tttcgtgagt attggcgttg tacaggcaag tcgtaaaata acagcctggc tattcagagt   120
atgataaaaa cagggggcaa gggatgttgc ttaatatgat gtgtggtcgt cagctgtcgg   180
caatcagttt gtgcctggcc gtaacattcg ctccactgtt caatgcgcag gccgatgagc   240
ctgaagtaat ccctggcgac agcccggtgg ctgtcagtga acagggcgag gcactgccgc   300
aggcgcaagc cacggcaata atggcgggga tccagccatt gcctgaaggt gcggcagaaa   360
aagcccgcac gcaaatcgaa tctcaattac ccgcaggtta caagccggtt tatcttaacc   420
agcttcaact gttgtatgcc gcacgcggta tttcctgcag cgtg                    464
```

```
        <210> 37
        <211> 429
        <212> DNA
        <213> Homo sapiens




        <400> 37
tcgcacaaga gctgctgatg tctatgtctt ttcgctcacg ggaaaatctc gaaacgtgag        60
ttcctcaacc gtgcggcgaa gtgcggtagg cgggatgtcg gcattagcgt tgtttgattt       120
gctcaagcca aattatgcgc tggcgactca ggtagagttt accgacccgg aaattgttgc       180
tgagtacatc acgtatcctt cgccaaatgg tcacggcgag gtgcggggtt atctggtgaa       240
gcccgcaaag atgagcggca aaacgccagc cgtagtggtg gtgcatgaga atcgtggact       300
gaatccgtat atcgaagatg tggcacggcg agtggcgaag gcggggtata tcgccctggc       360
acctgacggc ttaagttccg ttggaggtta tccgggaaat gatataaagg tggtatccgc       420
agcggcccc                                                               429




        <210> 38
        <211> 556
        <212> DNA
        <213> Homo sapiens




        <400> 38
gagaataacc tagacgttat tgacttgatg ccccgcgtcg gtaaggcgct ggataccacg        60
cagcgcggcg tgctgtttaa tgcagtaacc cgatggggca attaagtgaa acagagacat       120
ggcaattcct tgctgacaac agaaacgaaa tgtatatcat gccgcttagg tgtgccgttg       180
tcacctcaac ggcgattcca ggctataagg atagaagaag tgaaattgag atggtttgcc       240
tttttgattg tgttattagc gggttgttca tcaaagcatg actatacgaa cccgccgtgg       300
aacgcgaaag ttccggtgca acgtgcgatg cagtggatgc caataagcca gaaagccggt       360
gcagcctggg gcgtcgatcc acaattgatc acggcgatta tcgctatcga atcgggtggt       420
aatccgaacg cggtgagtaa atcgaatgcc attggtttga tgcagttaaa agcttcaacc       480
tccggacgtg atgtttatcg ccgtatgggc tggagtggtg agccgacgac cagcgagctg       540
aagaattcct caagac                                                       556




        <210> 39
        <211> 890
        <212> DNA
        <213> Homo sapiens




        <400> 39
accacgctgc aggaattcgg cacgaggcca aaccaaagag aagtttttat gctgccaggg        60
atttgtacaa gtaccgacac cagtacccaa acttcaaaga tatccgatat caaaatgact       120
tgagcaatct tcgttttttat aagaataaaa ttccattcaa gccagatggt gtttacattg       180
aagaagttct aagtaaatgg aaaggagatt atgaaaaact ggagcacaac cacacttaca       240
ttcaatggct ttttcccctg agagaacaag gcttgaactt ctatgccaaa gaactaacta       300
catatgaaat tgaggaattc aaaaaaacaa aagaagcaat tagaagattc ctcctggctt       360
```

```
ataaaatgat. gctagaattt tttggaataa aactgactga taaaactgga aatgttgctc    420
gggctgttaa ctggcaggaa agatttcagc atctgaatga gtcccagcac aactatttaa    480
gaatcactcg tattcttaaa agccttggtg agcttggata tgaaagtttt aaatctcctc    540
ttgtaaaatt tattcttcat gaagctcttg tggagaatac tattcccaat attaagcaga    600
gtgctctaga gtattttgtt tatacaatta gagacagaag agaaaggaga aagctcctgc    660
ggttcgccca gaaacactac acgccttcag agaactttat ctggggaccg cctcgaaaag    720
aacagtcgga gggaagcaaa gcccagaaaa tgtcttcccc tctcgcctcc agtcataaca    780
gtcaaacttc tatgcacaaa aaagccaagg actccaaaaa ttcctcctca gctgttcatt    840
taaatagcaa aacagctgaa gacaaaaaag tggcaccaaa agagcctgtg              890
```

<210> 40
<211> 393
<212> DNA
<213> Homo sapiens

<400> 40
```
accggctgcc atcttagtct agggactgag gagtcgccgc cgccccgagt cccggtacca     60
tgcatttcac ggtggccttg tggagacaac gccttaaccc aaggaagtga ctcaaactgt    120
gagaacttca ggttttccaa cctattggtg gtatgtctga cagtggatca caacttggtt    180
caatgggtag cctcaccatg aaatcacagc ttcagatcac tgtcatctca gcaaaactta    240
aggaaaataa gaagaattgg tttggaccaa gtccttacgt agaggtcaca gtagatggac    300
agtcaaagaa gacagaaaaa tgcaacaaca caaacagtcc caagtggaag caacccctta    360
cagttatcgt taccctgtg agtaaattac att        .                        393
```

<210> 41
<211> 437
<212> DNA
<213> Homo sapiens

<400> 41
```
gcattccttg aaagaaatgt tacagccaga tcacagcgca gaacgataaa atggcacaat     60
ccaacaacaa ttttacattt tcgcgaccgc tttggctgct ttcaggtccg tttcaatgat    120
atactgccag tcgttaattc aaaaatagtt gataattaca acaatctatt gaattgaaac    180
gctttccttc gtaattcgca actggaacac gcacgctatg agtaaaccca ttgtgatgga    240
acgcggtgtt aaataccgcg atgccgataa gatggccctt atcccggtta aaaacgtggc    300
aacagagcgc gaagccctgc tgcgcaagcc ggaatggatg aaaatcaagc ttccagcgga    360
ctctacacgt atccagggca tcaaagccgc aatgcgcaaa aatggcctgc attctgtctg .    420
cgaggaagcc tcctgcc                                                    437
```

<210> 42
<211> 392
<212> DNA
<213> Homo sapiens

```
        <400> 42
tcccctgcgt caattttcct gacagagtac gcgtaataac caaatcgcgc aacggaaggc          60
gacctgggtc atgctgaagc gagccaccag gagacacaaa gcgaaagcta tgctaaaaca         120
gtcaggatgc tacagtaata cattgatgta ctgcatgtat gcaaaggacg tcacattacc         180
gtgcagtaca gttgatagcc ccttcccagg tagcgggaag catatttcgg caatccagag         240
acagcggcgt tatctggctc tggagaaagc ttataacaga ggataaccgc gcatggtgct         300
tggcaaaccg caaacagacc cgactctcga atggttcttg tctcattgcc acattcataa         360
gtacccatcc aagagcacgc ttattcccca gg                                       392
```

```
        <210> 43
        <211> 555
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 43
tggctcgcgc gtcataatgg gagttttgat actgtggatt gccggttcga tgtggtagcc          60
ttcaccggga atgaggttga gtggattaag gatgccttta atggccactc ataattaagg         120
tttaaggatt agcgtgcaag aaagaattaa agcttgcttc actgaaagca ttcaaactca         180
aattgcggcg gcagaggcgc ttccggatgc catctcccgt gcagccatga cgctggttca         240
gtctctgctc aatggcaaca aaatcctctg ttgtggtaat ggaacttccg ctgccaatgc         300
acagcatttt gctgccagca tgatcaaccg tttcgaaacg gagcggccca gcttacctgc         360
cattgcacta aatactgata atgttgtctt aacggcgatt gccaacgatc gcttacatga         420
tgaagtgtat gcaaaacagg tgcgggcgct gggtcatgcg ggagatgtat tgttagccat         480
ttccacccgt ggcaacagcc gcgatattgt taaagcagtt gaagccgccg ttacgcgtga         540
tacgaccatt gtggc                                                          555
```

```
        <210> 44
        <211> 553
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 44
ctatgacctg attacaattc aggtccgacc cgagatctcc aaaatgccag gacgctgtgg          60
ctacacaagc taaccatgct gattaatgaa aagaaactca acatgatgaa tgccgagcac         120
cgcaagctgc ttgagcagga gatggtcaac ttcctgttcg agggtaaaga ggtgcatatc         180
gagggctata cgccggaaga taaaaaataa aaacagtgcc ggagcacgcc tccggcaact         240
tgcataaaaa caaacacaac acgcacccgg aatgatgaaa aaatatctcg cgctggcttt         300
gattgcgccg ttgctcatct cctgttcgac gaccaaaaaa ggcgatacct ataacgaagc         360
ctgggtcaaa gataccaacg gttttgatat tctgatgggg caatttgccc acaatattga         420
gaacatctgg ggcttcaaag aggtggtgat cgctggtcct aaggactacg tgaaatacac         480
cgatcaatat cagacccgca gccacatcaa cttcgatgac ggtacgatta ctatcgaacc         540
catccccggg aca                                                            553
```

19

```
<210> 45
<211> 310
<212> DNA
<213> Homo sapiens


<400> 45
tctcgttacg acttcgagcg ttggacccgg ggatctctct actatcgctg caagcgagcc      60
agaaaaaact ggatgaactg atcgaacagc actaaaccca ggacaggaat ccgcaatgaa     120
caggcttttt tcaggtcgtt ccgatatgcc ctttgcgctg ctgcttctcg cgcccagctt     180
attactgctg ggcggtctgg tggcgtggcc gatggtgtcg aatatcgaaa tcagtttttt     240
acgtctgccg ctcaatccca acatcgagtc aacgtttgtt ggggtgagca actatgtgcg     300
tatcctctcc                                                           310




<210> 46
<211> 627
<212> DNA
<213> Homo sapiens


<400> 46
ctcgctgact cgcttcgctt ccccgacgcg ctgggttccc ggagcgcaga gcccagcgtt      60
agcgggtggg ctccccgagg ccccctgccc tcgccgggct gctccagggt gtcgctcctc     120
tggctgctcc cgaaggggct tctggccctg aggacggtgg tgccaagcga acttcatttt     180
taaaaagaac tggtggatga gaagagcgag cgagggcgag ctatggaccc tgtgagtcag     240
ctggcctctg cgggcacctt ccgggtgctg aaggagcccc ttgccttcct gcgagccctg     300
gaattgcttt ttgcaatctt tgcatttgca acatgcggtg gctattctgg aggcctgcgg     360
ctgagtgtgg actgcgtcaa caagacagaa agtaacctca gcatcgacat agcgtttgcc     420
tacccattca ggttgcacca ggtgacgttt gaggtgccca cctgcgaggg aaaggaacgg     480
cagaagctgg cattgattgg tgactcctcg tcttcagcag agttcttcgt cactgttgct     540
gtcttcgcct tcctctactc tttggctgcc actggtcgtt acattttctt tcacaacaaa     600
aaccgggaaa caaccggggg cccactg                                        627




<210> 47
<211> 998
<212> DNA
<213> Homo sapiens


<400> 47
acctgggcac cgtgtcctat ggcgccgaca cgatggatga gatccagagc catgtcaggg      60
actcctactc acagatgcag tctcaagctg gtggaaacaa tactggttca actccactaa     120
gaaaagccca atcttcagct cccaaagtta ggaaaagtgt cagtagtcga atccatgaag     180
ccgtgaaagc catcgtgctg tgtcacaacg tgaccccgt gtatgagtct cgggccggcg     240
```

```
ttactgagga gactgagttc gcagaggctg accaagactt cagtgatgag aatcgcacct    300
accaggcttc cagcccggat gaggtcgctc tggtgcagtg gacagagagt gtgggcctca    360
cgctggtcag cagggacctc acctccatgc agctgaagac ccccagtggc caggtcctca    420
gcttctgcat tctgcagctg tttcccttca cctccgagag caagcggatg ggcgtcatcg    480
tcagggatga atccacggca gaaatcacat tctacatgaa gggcgctgac gtggccatgt    540
ctcctatcgt gcagtataat gactggctgg aagaggagtg cggaaacatg gctcgcgaag    600
gactgcggac cctcgtggtt gcaaagaagg cgttgacaga ggagcagtac caggactttg    660
aggtgagccg actcccaggc atcccatcct cctacgacgg tgccttcctt acgctgaaat    720
tagttcttcc tgtctttgta tgaaattaga gctgggatcg ctatagtcta ggagtgaagg    780
cagcttcgct cagcaggagc atggggggat cctgtctgca tttctgtttc caccatttct    840
ccagcttgct ggggaaggag ggttacagaa gcaaagaagt gccagtttcc ttagaattgt    900
gcttgataac tcctcaatga tcacacgcca gccgagctga gtacacataa gagtatgtgc    960
acataggcgc ctcccctct gtccccagag cccatgcg                             998
```

```
        <210> 48
        <211> 864
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(864)
        <223> n = a,t,c or g
```

```
        <400> 48
ttttttttt ttgagacaca gtctggctat gtcacccagg ctgagtacag tagcatgatc    60
ctggttcgct gcaacctcca cctcccaggc tcaagtgatc ctcccacctc agcctcctga    120
gtagctagga ctacaggtac gtgccacaac acctggctaa tttttttatt ttttgtagag    180
acaagggtct ccctacgttg tccaggctgg acttgaactc ctgggttcaa gcgatcctac    240
caccttggcc tcccacagca ctggggttac aggcaggagc cactgcacct ggccctgtct    300
ttactgatgg tcctgcccca tgcctcccac acctaaccct gggcacccac tcccgaagct    360
ctcctactgg ctgcagggtc tgcctctgtg aggacagtga agccgatgac acgggaggtg    420
aagtcgaagg ccgtctgctg gccatcgtgg atcactgaga tgcagtggcg gtccccgtag    480
ctggcccgtg gcatgccacc ctggaagatg gtgaagggca acccctgcct agtggtcagc    540
cagaggattc tggtaatcgc tttgcaagga aagggaccgt aaggcacgag gctgcggagg    600
ggctctggtt gctgggcttc gctggacacg ggcccactgg cagtagctgc cgtcagagtg    660
acagctgacg agcaggcggc cgtcccgctg ccaccagatg ttctccagtt gctggctgct    720
gaggaagtgg tagagcacgc ggctgccctg taggtcccag atgacaacga ggcctcggct    780
gtagccgatc aggatctggt tggggtcttc aggtgcttcc tgcatgcttt caccatttng    840
aacaaacagc cggtgggggc cctc                                          864
```

```
        <210> 49
        <211> 1327
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 49
tttcgtgagc atttgagggc tgtttatgat ctatggggta aaactctctg actgactgga    60
```

21

```
tgaggaaaat gaaatgcgag agggttgagc ccaaggttca ttcatctgct caatcgaggc    120
cactcattct ggccactgtg tgccagatgc tggggattct gtcctcttgg gagctgacgt    180
agcccaggtg gtggctgtgg gctgctggag gtggggatcc aggtggagga gcaagtctag    240
ggaagtgtgc tggggaggcc ctctctgagg aggtgacatg ccagctgaga tctgaatggc    300
aggaaggagt ggccatgagg acatgggtga tgacagtctg ggtagaaaga tgaaggaggg    360
gaagcaggta aggagttgtg atctaattct gggagccact ggagggtgaa agcagggatt    420
agaagtcagg gatttacatt ttaaagagat cacctctggc agggctttgt taagagtggc    480
ctgcaagagg ccaagcatgg ttccagggg ccagttgcag agggctggtg caggagccca    540
ggcaaggatt acggggctca gtcctgccct gtggggagca agagtacacg gctggattcc    600
agagctgcca gcaggcctac ccctgggc ctgcctgtgg cctctcatcc ctgcctgtcc    660
cagtagacac tgggggtggg taagtgctcc cgtgaagggg gggcccaggc gattctgggt    720
ctggccctgt gtctacaggg gagcaccgtg gcctgggcgc tggcgtctcc aaggtgcgga    780
gcctgaagat ggacaggaag gtgtggacag aaacacttat cgaggtgggg atgcccctgc    840
ttgccaccga tacttggggt ctgccccatt caacagctgt ctgggtctcc agcccctc    900
cctatctcag tgaccacagc accttggagc tggaaagaga cccctttgtga taatatagtg    960
ggtgggggatt tcggaaaagc aattttttggc aaagtcagca aactggccag tgagctaaga    1020
atgtttttat agttgtaaag tgttatttttt ttttaaagaa aaaaaaagga agaaaatgca    1080
gcagagactg tatgtgttct gtaaagccga aaataattac tatttcgccc tttagagaaa    1140
gaatttgcta acttctgatc taatttcact gtcatccatt gaatagatgt gtaaactgag    1200
gtcctgggca gggctgtaat ctgcctgaga ttaccctgta aatgcatatt gaccaccatc    1260
cctgcctctt tctgtcccac ttctgaatga cccagggcct tctcccctac cttgcacagc    1320
ctgtatt                                                              1327
```

```
<210> 50
<211> 436
<212> DNA
<213> Homo sapiens
```

```
<400> 50
ctgtcgtgca attccgagca ggcactgctc agtctggtgc ctgtgcagag ggagctactt    60
cgaaggcgct atcagtccag ccctgccaag ccagactcca gcttctacaa gggcctaggt    120
acctgccctt cccagctgag gctttctgag cccccaccga ccccagaca cctcagcgta    180
gcctctgtct cccatcacat gttcccctct catcgctccc tttgcccaca tcttccagac    240
ttcttcgccg ccccattccc atcagacaat ctcccctaca ccctccagtc cccttttcccc    300
tcacctcctc cagctactcc ctctgaccat gctcttatcc tccaccacag acttaaatgg    360
gggcccagat gaccctctgc agcagacagg ccagctcttc ggggcctgg tgcgtgatat    420
ccggcgccgc tacccc                                                    436
```

```
<210> 51
<211> 481
<212> DNA
<213> Homo sapiens
```

```
<400> 51
tcgcctagca gtaagttggt tggcatgtgg tgggcaggca gggctggcag tagtcggacc    60
acttcagtct ccctgctctg ccttccccag caccattcgg tgcctcgaac ctcctggtga    120
accccctgga gccccaaaat gcagataaga tcaagatcaa gatcgcagac ctgggcaacg    180
cctgctgggt ggtatgagca agtgtgggag agcagagtgg ggggcccctgc tccaagggtg    240
```

```
gaggcacagg gccgctcttg gggagcccta ccccagtctg cagtgcacgt gaaccgtcgg    300
ctgggtgggc actggtcctg cccagtcaac agcactgggg ccatggccaa gggcaggggc    360
cactaggaag ggatcagcct cagcctcaga tcactgggcc tgtccctctt ggaggacctg    420
gggaccccga ggctcacagc aaaccccact gagcttctcg ggtaggcgga tcggggtggg    480
g                                                                    481
```

```
        <210> 52
        <211> 435
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 52
cccgggtcga cccacgcgtc cgagctcctc gttgtggaga caagatcaaa aatcatatgt     60
atagaatgtg actgtggctc ccttaaagat tgtgccagtg atagatgttg tgagacctct    120
tgtacccttt ctcttggcag tgtttgcaat acaggacttt gctgccataa gtgtaaatat    180
gctgcccctg gagtggtttg cagagacttg ggtggtatat gtgatctacc ggaatactgt    240
gatgggaaaa aggaagagtg tccaaatgac atctacatcc aggatggaac cccatgttca    300
gcagtatctg tttgtataag aggaaactgc agtgaccgtg atatgcagtg tcaagccctt    360
tttggctacc aagtgaaaga cggttcccca gcgtgctatc gaaaattgaa taggattggt    420
aaccgatttg gaacg                                                     435
```

```
        <210> 53
        <211> 728
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 53
ccgggtcgac ccacgcgtcc ggacgccagt ttagcccagg tccacggact acaatgtttc     60
gtattcctga gtttaaatgg tctccaatgc accagcggct tctcactgat ttactatttg    120
cattagaaac tgatgtacat gtttggagga gcccattcta caaagtctgt aatggatttt    180
gtcaatagca atgaaaatat tattttgta cataacacaa ttcacctcat ttcccaaatg    240
gtagacaaca tcatcattgc ttgtggagga attttacctt tgctctctgc tgctacatca    300
ccaactggtt ctaagacgga attggaaaat attgaagtga cacaaggcat gtcagctgag    360
acagcagtaa ctttcctcag ccggctgatg gctatggttg atgtacttgt gtttgcaagc    420
tctctaaatt ttagtgagat tgaagctgag aaaaacatgt cttctggagg tttaatgcga    480
cagtgcctaa aattagtttg ttgtgttgct gtgagaaact gtttagaatg tcggcaaaga    540
cagagagaca ggggaaataa atcttcccat ggaagcagta aacctcagga agttcctcaa    600
agtgtgactg ctacagcagc ttcgaagact ccattggaaa atgttccagg taacctttct    660
cctattaagg atccggatag acttcttcag gatgttgata tcaatcgcct tcgtgctgtt    720
gtctttcg                                                             728
```

```
        <210> 54
        <211> 2228
        <212> DNA
```

<213> Homo sapiens

<400> 54
```
tttttttttt ttcctgaaat gtaaattgtt tttaatatat ttaagagcac acagaagtct    60
tgatttataa aaaaataaat atataacatg acaaatttac tgatgatcct ggagctctga   120
ggtcaaactc tttaaatgat cagtgaaaac ataaaacatc catgatctgt taacacacac   180
aggagcatat tccagttgta aaaaacaaat tccttgaagg ctcagaacga acaaaaatca   240
gtctttatgg cagaaagcac atccaaagct aggcaatgaa gttcagcctg ggccacgtga   300
acctttcacc agccagccta taacctatgg agccaggaca ggaaagcatg atccttcagc   360
tcatgacgcc acccaggctt ccagacaact gcagaatgaa agagtccctc agaggctccc   420
cagccctgc tgccatcata aagcacggga gggattgttt tgtccttagc ggctctgtcc   480
taaatttgag agcaggagac tgagaaggtt atgctcatta aatattgtca ttgtaacacg   540
gaatggaaat catgatcctt gcccatgggc actgagctga aagaaagagg aacctcacat   600
gaggctttcc tagagaccag gatgttgggt gagtgggcgt gcacttctca agtgggcaag   660
gaagaactgc ttttctccag ctgacatgct ctcaggggtg aagaagttta gcttaaaata   720
cctgatggcg ctgcataaac tggggatttg ggaactgagt ttttagctct gtgacacaca   780
acataaaaaa caaaaatcca gtctcattag ctaaattcgg attaaaatct gaaatgtttt   840
tatggagttg ccaacaggct ggaatgtacc tgatacaatt taatctgctt ttatttcttt   900
ggctgtcttc caaaccactt tcttcctgta attcttaagt tggctagttc tccttcctca   960
gaaaaattac ccctaagaat cttcctaata gtgagggtgt acttccgaat agaagagtcc  1020
ttcggctgaa atggcatctc caaggcctac agttcgaatg gggtctttac acaccaatac  1080
tggtgtgaag tggaaggata ttccctctct gtgccattct actactggct tgtttgggtt  1140
taatacaatc ctggagcctg cctccgaatg ggaagtcatg aactcttggg gtgccctcag  1200
agacactcgg ctggtgtcta tggtttctgt ggcgcaggcc tgtgtcccag ccacacgagc  1260
tcctgcagcc acggctgcca gctggttggc ccagtgtcca tccacagttg ccaggatgtg  1320
gtagaccagc gtgtggaaat ggatcctggt gagatccgag gctctgcttt tactcctccc`  1380
atgttctttc aagatccaga agaggatgtc actgaccatg cccacatcag gaacaccgtt  1440
ccaggaagag agagaagagt gaggtccaga ggctgactgg gtgagaaata acagctcctg  1500
ttcattcagc ccaagggaag tcaccgcggg aaagacctgc tgaaggaaca atgctgctca  1560
tgagctccct gttagtcata ctggcccagc tctaggtgaa actggaatac cagtggggat  1620
gtcagaaatg gaggttacaa cctccaagag tctcttcctc tggagctcct tgctttgtcc  1680
ctccatcatg tgcaatccag agaggccccc caggtctggc tgaaactcct ccaggctaga  1740
cacaaacacc tccagcatat tcatggcccc gttggagagg tcgtgagaga agatgaatcg  1800
gttggcatgg ggagctttta actggcccca ctcctcccct gcttgatact ctaaaatgag  1860
gtggaactca tccacttcct gcaatgactc tggtggaaca aagacattgt catcaagaag  1920
ctcatgtagc tttggaccaa ctggaccgca aagaagaacc tttaaatctg agttggctgc  1980
aaatttctgt ccaattaaag ctgcatttcc tcctacatag tgctgggctc ctgggaactc  2040
tgacgcaacc tgggcaatgt cgtgaaaagt ttccttatca ctgaagaagc gctcagcagc  2100
tgctcccttc cccatgaagt gaatgaaggc ttcttccaga tcattccttg aatgcagaat  2160
gctgtgatct ttcccattcc caggactaag gccaagtgcc tgcaagagct tcaccccctga  2220
ggaattca                                                           2228
```

<210> 55
<211> 405
<212> DNA
<213> Homo sapiens

<400> 55
```
gcaggagttc aagaccaacg tggccaacat ggggaaagcc catcactact aaaaatacaa    60
aaactagcca ggcgtggtga cacacatctg taatcccagc tactcgaggc gctgaggcag   120
gagaatcact tgaaccagga ggcagaggtt gcagtgagcc gagatcatgc cactgcactc   180
cagcctgggc cacagagcaa gactccatct gacaactagc tgttccagcc cccagccact   240
```

24

```
tgagtcatct cagctgaggc cccacacacc aagaagcaga ggtgagtcta atccacagag      300
ccctggtcag acatgatgac ggtggcttca cccgggggtc tccgcacagc agcggcctcg      360
ggtaagcaga acctcgctcc ggggtttaca aatccttcct cgtgc                      405
```

```
        <210> 56
        <211> 1652
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 56
actaggggag gtgctcaagt gccagcaggg cgtatccagt ctggcctttg ccctggcctt       60
cttgcagcgc atggacatga agccgctggt ggtcctgggg ctgccggccc ctacggctcc      120
ctcgggctgt ctttccttct gggaggccaa ggcgcagctg gccaagagct gcaaggtgct      180
ggtagacgcg cttcgacaca acgccgccgc tgctgtgcca ttttttggcg gcgggtctgt      240
gctacgcgct gccgagccgg ctccccatgc cagctacggc ggcatcgtct cggtggagac      300
agacctgctg cagtggtgcc tggagtcggg cagcatcccc atcctgtgcc ccatcgggga      360
gacggccgcg cgccgctccg tgcttctcga ctccctggag gtgaccgcgt cgctggccaa      420
ggcgctgcgg cccaccaaaa tcatcttcct caataacaca ggcggcctgc gcgacagcag      480
tcataaggtc ctgagtaacg tgaacctgcc cgccgacctg gacctggtgt gcaacgccga      540
gtgggtgagc acaaaagaac ggcagcagat gcggctcatc gtggacgtgc tcagccgcct      600
gccccaccac tcctcggccg tcatcaccgc cgctagcacg ctgctcactg agctctttag      660
caacaagggg tccgggaccc tgttcaagaa cgccgagcga atgctacggg tgcgcagcct      720
ggacaagctg gaccagggcc gtctagtgga cctggtcaac gccagcttcg gcaagaagct      780
cagggacgac tacctggcct cgctgcgccc gcggctgcac tccatctacg tctccgaggg      840
gtacaacgcc gccgccattc tgaccatgga gcccgtcctg gggggcaccc cgtacctgga      900
caaatttgtg gtgagctcca gccgccaggg ccaaggctcc ggccagatgc tgtgggagtg      960
cctgcggcgg gaccttcaga cacttttctg gcgctcccgg gtcaccaacc ccatcaatcc     1020
ctggtacttc aaacacagtg atggcagctt ctccaacaag cagtggatct tcttctggtt     1080
tggcctggct gatatccggg actcctatga gttggtcaac cacgccaagg gactgccaga     1140
ctcctttcac aagccagctt ctgacccagg cagctgaccc tcaccatgga cactacaggc     1200
cctggaatgg ccagggtgga ccaaaagcca tgcccagctg ggcatgaccc caggcagcca     1260
gccacaggct gaaggggggct tgttggctga gtgatctgca gaggagaaag cagcccccag     1320
ctctgcccca gaggaggcgc tgaagtggga caagcacagg aaagaagggg accagtctag     1380
gaccccaact tgactcactc taaagctaca accaaatggc cttcgatttt caacctgggg     1440
attaggggag gggagggtgc cttccagggc tcttactcag gacttaaccc ttaagggtga     1500
gcttagtttc tgtcctcttg tgcttatgtt ttgaggctcc cttacccaaa ataataccc     1560
tgcctgcgtg atattctacc attcatttta attcctttgg gtcttgcagt ttttcaggag     1620
gccttgatta aaatgcaaat acttgtctga ga                                   1652
```

```
        <210> 57
        <211> 1129
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 57
tttttttttt ttgagacgga gtctcgctct gtggcccagg ctggagtgca gtggcgcgat       60
ctcggctcac tgcaagctcc gcctcccggg ttcacgccat ctcctgcct cagcctcccg      120
agtagctggg actacaggcg cccgctacca cgcccggcta attttttgta tttttagtag      180
```

```
agacggggtt  tcaccgtgtt  agccaggatg  gtctcgatct  cctgacctcg  tgatccgccc   240
gcctcggcct  cccaaagtgc  tgggattaca  ggcgtgagcc  accgcgcccg  gcccatttac   300
taaatgttaa  gttccttata  attccatctc  tttcagcacc  caatacaggg  gtttacatag   360
aggaagtact  caatatttcc  tttctttttt  tctttttttt  ctggagatag  tctcgctctg   420
tcaccaggct  ggagtgcagt  ggcgtaatct  cggctcactg  caacctccac  ctcctgggtt   480
cacgccattc  tcctgcctca  gcctcccgag  tagctgggac  tacaggcgcc  caccatcacg   540
cccggctaat  ttttttgta   ttttagtag   agatggggtt  tcaccgtgtt  agccaggatg   600
gtctcgatct  cctgacccttg  tgatccgccc  gcctcggcct  cccaaagtgc  tgggattaca   660
ggtgtgagcc  accgcgcccg  gcctaaaaaa  attttttttt  tcttgagaca  aagtcttgct   720
ctgttcccca  ggctgaagtg  cagggcatg   atatcagctc  attgcaacct  ccacctcccg   780
ggttcaagcg  attctcctgc  ctcagcctcc  cgagtagctg  ggattacagg  tgccctccgc   840
cacgtccagc  taattttctg  ttttttagta  gagacggggt  ttcaccgtgt  tagccaggat   900
ggtctcgatc  tcctgacctc  gtgatccacc  tgcctcagcc  tcccaaagtg  ctgggattac   960
aggcgtgagc  cactgagccc  agccccattt  tatttcattt  ctctaacagc  aatgatatat  1020
atacatccca  tagtatatcc  tactgatata  atagcccctt  tccccattca  acacctgtgt  1080
aatcaggaaa  taaaaccctc  gtgcagcatt  ggcgtctgga  tagtcctcg              1129
```

```
        <210> 58
        <211> 475
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 58
gttccgccca  attggcataa  tacgccaagc  cctgtgctct  gcagacggcc  accagagaag    60
gatccttact  ctgcgcctgg  gattgctcgt  tatcccgttt  ctccccgcaa  gtaacctgtt   120
cttccgagtg  ggcttcgtgg  tcccgagcgt  ggggtgctgg  tgatgctgc   ttttggatt   180
cggagcctgc  gcaaacacac  cgagaaaaag  aagctcatcg  ctgccgtggt  gctgggaatc   240
ctactcagca  agatgctgag  aggctgagat  gcgcggtgcg  cggcggcgag  tggcggagcg   300
aggggcggtt  ttcagaggcg  ctgtgtctgt  gtgtcccctc  agtgctgagg  ttcgctgcaa   360
catcggcaga  aacctggctg  ctaaaggcaa  ccaaacgggc  gccatcagat  accaccggga   420
agctgtaagc  ttaaatccca  agacgaaatc  gtcgacacgg  gaattccggc  cttgc         475
```

```
        <210> 59
        <211> 711
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 59
ggaaaatagc  agattttggg  ttcagtaacc  tcttcactcc  tgggcagctg  ctgaagacct    60
ggtgtggcag  ccctccctat  gctgcacctg  aactctttga  aggaaaagaa  tatgatgggc   120
ccaaagtgga  catctggagc  cttggagttg  tcctctacgt  gcttgtgtgc  ggtgccctgc   180
catttgatgg  aagcacactg  cagaatctgc  gggcccgcgt  gctgagtgga  aagttccgca   240
tcccatttt   tatgtccaca  gaatgtgagc  atttgatccg  ccatatgttg  gtgttagatc   300
ccaataagcg  cctctccatg  gagcagatct  gcaagcacaa  gtggatgaag  ctaggggacg   360
ccgatcccaa  ctttgacagg  ttaatagctg  aatgccaaca  actaaaggaa  gaaagacagg   420
tggacccccct  gaatgaggat  gtcctcttgg  ccatggagga  catgggactg  gacaaagaac.  480
agacactgca  gtcattaaga  tcagatgcct  atgatcacta  tagtgcaatc  tacagcctgc   540
tgtgtgatcg  acataagaga  cataaaaccc  tgcgtctcgg  agcacttcct  agcatgcccc   600
```

26

```
gagccctggg cctttcaagc accagtcaat atccaggcgg agcaggcagg tactgctatg      660
aacatcagcg ttccccaggt gcagctgatc aacccagaga accaaattgt g              711
```

```
        <210> 60
        <211> 344
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 60
ggcacgagaa tttttaggcc accgagcttc tataacatgg tcatgagctc gggtgcacca       60
tagatttccc aaagctgagg ttgcataacc cctctgctga ggacagatct taccgaagat      120
cgcacgaagt gctgccatgg agatctgctt gaatgcgctg atgacagggc agaccttgtc      180
gaggatatct gggaaaatca agattcaatc tccactatac tgattgaatg ctgtgaaaaa      240
cctctgttgg aaaaatccca ctgcattgcc gaagtggaaa atgatgagat gcctgctgac      300
ttgccttcat tagctgctga ttttgttgaa agtaaggatg tttg                      344
```

```
        <210> 61
        <211> 594
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 61
gcttgagctc gagcgacggc gctggcggag acgccggctg ctcctcccct ccccgccgct       60
tttcctaaaa ggattgtaca ccttagaagt gcttaaggaa gagtgatgaa gctctgaatc      120
gtgtcctgca gcagattctg agtgccaccc aagatgaaga gagggacaag cttgcatagt      180
aggcggggca agccagaggc cccaaaggga agtccccaaa tcaacaggaa gtctggtcag      240
gagatgacag ctgttatgca gtcaggccga cccaggtctt catccacaac tgatgcacct      300
accggctctg ctatgatgga aatagcttgt gctgctgctg ctgctgctgc tgcatgtcta      360
ccaggagagg agggaactgc ggagcggatc gaacggttgg aagtaagcag ccttgcccaa      420
acatccagtg cagtggcctc cagtaccgat ggcagcatcc acacagactc tgtggatgga      480
acaccagacc ctcagcgcac aaaggctgcc attgctcacc tgcagcagaa gatcctgaag      540
ctcacagaac aaatcaagat tgcacaaaca gcccgacgaa atcgtcgacc cggg           594
```

```
        <210> 62
        <211> 1609
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1609)
        <223> n = a,t,c or g
```

<400> 62

```
cgaagttatg  gccttcctta  taaggaaaag  gggtggattg  gaggaatcgc  caattgaagt    60
ttcgaaggat  cgctttagct  gaatatcaga  gaaccttgtg  aagatcttaa  agagcaacta   120
aagcataaag  aatttcttct  ggctgctaat  acttgtaacc  gtgttggtgg  tctttgtttg   180
aaatgtgctc  agcatgaagc  tgttctttcc  caaacccata  ctaatgttca  tatgcagacc   240
atcgaaagac  tggttaaaga  aagagatgac  ttgatgtctg  cactagtttc  cgtaaggagc   300
agcttggcag  atacgcagca  aagagaagca  agtgcttatg  aacaggtgaa  acaagttttg   360
caaatatctg  aggaagccaa  ttttgaaaaa  accaaggctt  taatccagtg  tgaccagttg   420
aggaaggagc  tggagaggca  ggcggagcga  cttgaaaaag  aacttgcatc  tcagcaagag   480
aaaagggcca  ttgagaaaga  catgatgaaa  aggaaataa   cgaaagaaag  ggagtacatg   540
ggatcaaaga  tgttgatctt  gtctcagaat  attgcccaac  tggaggccca  ggtggaaaag   600
gttacaaagg  aaaagatttc  agctattaat  caactggagg  aaattcagag  ccagctggct   660
tctcgggaaa  tggatgtcac  aaaggtgtgt  ggagaaatgc  gctatcagct  gaataaaacc   720
aacatggaga  aggatgaggc  agaaaaggag  cacagagagt  tcagagcaaa  aactaacagg   780
gatcttgaaa  ttaaagatca  ggaaatagag  aaattgagaa  tagaactgga  tgaaagcaaa   840
caacacttgg  aacaggagca  gcagaaggca  gccctggcca  gagaggagtg  cctgagacta   900
acagaactgc  tgggcgaatc  tgagcaccaa  ctgcacctca  ccagacagga  aaaagatagc   960
attcagcaga  gctttagcaa  ggaagcaaag  gcccaagccc  ttcaggccca  gcaaagagag  1020
caggagctga  cacagaagat  acagcaaatg  gaggcccagc  atgacaaaac  tgaaaatgaa  1080
cagtatttgt  tgctgacctc  ccagaataca  ttttttgacaa  agttaaagga  agaatgctgt  1140
acattagcca  agaaactgga  acaaatctct  caaaaaacca  gatctgaaat  agctcaactc  1200
agtcaagaaa  aaaggtatac  atatgataaa  ttgggaaagt  tacagagaag  aaatgaagaa  1260
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gaccngcttc  ttccnggaga  gggagggnct  gtcggaagag  gtgggnccgn  cttggggncc  1440
nngttaccca  gnatncncaa  tcttttttgg  ttgacccggt  tggacagggt  ggacttnant  1500
gtttttncaaa  ggngnttttt  cattccanct  tgtttttngct  taatttngcn  caacgnaccc  1560
acggcctncc  cggnntgaaa  cccccncccc  tgaggggggg  ttntccccc              1609
```

<210> 63
<211> 615
<212> DNA
<213> Homo sapiens

<400> 63

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catcctatcc  cgtgtggtgg  aattcgccgc  tgactgctga  ggtgccaccc  gagctgctgg    60
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ggggcctgca  gagctggaag  cgcgggggacg  accccctggac  ggagcatgcc  aagtggttcc   180
ccagctgtca  gttcctgctc  cggtcaaaag  gaagagactt  tgtccacagt  gtgcaggaga   240
ctcactccca  gctgctgggc  tcttgggacc  cgtgggaaga  accggaagac  gcagcccctg   300
tggcccccctc  cgtccctgcc  tctgggtacc  ctgagctgcc  cacacccagg  agagaggtcc   360
agtctgaaag  tgcccaggag  ccaggagggg  tcagtccagc  cgaggcccag  agggcgtggt   420
gggttcttga  gcccccagga  gccaggggatg  tggaggcgca  gctgcggcgg  ctgcaggagg   480
agaggacgtg  caaggtgtgc  ctggaccgcg  ccgtgtccat  cgtctttgtg  ccgtgcggcc   540
acctggtctg  tggctgagtg  tgcccccggc  ctgcagctgt  gccccatctg  gcagaagccc   600
ccgtcccgca  gccgg                                                         615
```

<210> 64
<211> 839

28

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(839)
<223> n = a,t,c or g

<400> 64
aagaatgtct ggaagagatg gaagaaaagg ttttttgtat tggtgcaggt cattcagtac   60
acgtttgcca tgtgcagtta tcgggagaag aaagcggagc ctcaggaact tctacaattg   120
gatggctaca ctgtggatta caccgacccc cagccaggtt tggagggtgg ccgagccttc   180
ttcaatgctg tcaaggaggg agacaccgtg atatttgcca gtgacgatga acaagaccgc   240
atcctgtggg tccaggccat gtatcgggcc acggggcagt cacacaagcc tgtgcccccg   300
acccaagtcc agaaactcaa cgccaaggga ggaaatgtac ctcagctgga tgcccctatc   360
tctcaatttt acgcagatag agctcaaaaa catggcatgg atgaatttat ctcttccaac   420
ccctgtaact ttgaccacgc ttccctcttt gagatggtac aacgccttac tttggatcac   480
agacttaatg attcctattc ttgcctgggc tggttcagtc ctggccaggt gtttgtacta   540
gacgagtatt gcgcccgaaa tggagtccgg gggtgtcacc gacatctctg ctacctcaga   600
gacttgcttg aacgggcaga aaatggcgcc atgatcgacc ccacccttnt tcactacagc   660
tttgccttct gtgcatccca tgtccatggg aacaggcctg atggaattgg gaactgttga   720
ctgttgaaga aaaggaacgt tttttgaagg aaatcaaaag aggaggnttc cgnagttctg   780
ctaagaaaaa tcaggttaca acattttagg naattgcttt tcccatttgg gtcgaacct   839

<210> 65
<211> 1678
<212> DNA
<213> Homo sapiens

<400> 65
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ccggcagagg ctgcgggagc gactgtggga ggactgtgcc cgcgccgggc tcctgctggc   120
ccctggccac caagggccac agcgccccgt caaggacgag ccacaggacg gggagaatcc   180
gaatccgccg aactggtccc gcacagtggt cagggacgtg cggctgatca gcgccaagac   240
cggctatgga gtggaagagt tgatctctgc ccttcagcgc tcctggcgct accgtgggga   300
cgtctactta gtgggcgcca ccaacgccgg caaatccact ctctttaaca cgctcctgga   360
gtccgattac tgcactgcca agggctccga ggccatcgac agagccacca tctcccttg   420
gccaggtact acattaaacc ttctgaagtt tcctatttgc aacccaactc cttacagaat   480
gtttaaaagg catcaaagac ttaaaaaaga ttcaactcaa gctgaagaag atcttagtga   540
gcaagaacaa aatcagctta atgtcctcaa aaagcatggt tatgtcgtag aagagttggg   600
aaggacattc ttgtattcag aagaacagaa ggataacatt cccttttgagt ttgatgctga   660
ttcacttgcc tttgacatgg aaaatgaccc tgttatgggt acacacaaat ccaccaaaca   720
agtagaattg actgcacaag atgtgaaaga tgcccactgg ttttatgaca ccccctggaat   780
tacaaaagaa aattgtattt taaatcttct aacagaaaaa gaagtaaata ttgttttgcc   840
aacacagtcc attgttccaa gaacttttgt gcttaaacca ggaatggttc tgttttgg   900
tgctataggc cgcatagatt tcctgcaggg aaatcagtca gcttggttta cagtcgtggc   960
ttccaacatc ctccctgtgc atatcacctc cttggacagg cagacgctc tgtatcagaa   1020
gcatgcaggt catacgttac tccagattcc aatgggtgga aaagaacgaa tggcaggatt   1080
cctcctctt gttgctgaag acattatgtt aaaagaagga ctgggggcat ctgaagcagt   1140
ggccgacatc aagttttcct ctgcaggttg ggtttcagta acacctaatt ttaaggacag   1200
actgcatctc cgaggctata cacctgaagg aacagttttg accgtccggc ccctctctt   1260
gccatatatt gttaacatca aaggacagcg catcaagaaa agtgtggcct ataaaaccaa   1320

```
gaagcctcct tcccttatgt acaacgtgag gaagaagaaa ggaaagataa atgtatgaga    1380
ccgaccttgt tcactccaga tattaactgt attgaacaca acaaaataca ttgaatttgt    1440
attaaacata taacgcataa ataaagctcc cattcttacc cttaaaaata aaaggagaat    1500
gaaaaaaaaa gatgccaata ggcatatacg tggttttggg tattccgggg tcttcccgtg    1560
gtctgttcac tttgcggtgg tggtgatata ttaggcagtc ggggcgcctg atgtacgcct    1620
tcttatagag gtacatggtt ggatgcagcg tcttgacgtg ggattcgctt tattcgcc     1678
```

```
        <210> 66
        <211> 1888
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 66
    tccacggtgg catccatgat gcatcgtcag gagactgtgg agtgtttgcg caagttcaat     60
    gcccggagaa aactgaaggg tgccatcctc acgaccatgc ttgtctccag gaacttctca    120
    gctgccaaaa gcctattgaa caagaagtcg gatggcggtg tcaagccaca gagcaacaac    180
    aaaaacagtc tcgtaagccc agcccaagag cccgcgccct tgcagacggc catggagcca    240
    caaaccactg tggtacacaa cgctacagat gggatcaagg gctccacaga gagctgcaac    300
    accaccacag aagatgagga cctcaaagct gccccgctcc gcactgggaa tggcagctcg    360
    gtgcctgaag gacggagctc ccgggacaga acagcccect ctgcaggcat gcagccccag    420
    ccttctctct gctcctcagc catgcgaaaa caggagatca ttaagattac agaacagctg    480
    attgaagcca tcaacaatgg ggactttgag gcctacacga agatttgtga tccaggcctc    540
    acttcctttg agcctgaggc ccttggtaac ctcgtggagg ggatggattt ccataagttt    600
    tactttgaga atctcctgtc caagaacagc aagcctatcc ataccaccat cctaaaccca    660
    cacgtccacg tgattgggga ggacgcagcg tgcatcgcct acatccgcct cacccagtac    720
    atcgacgggc agggtcggcc ttcgaaccca gccaagtcag aagaagaccc gggtctggca    780
    cccgtcggga atggcaagtg gctcaatgtc cactatcact gctcaggggc cccctgcccg    840
    caccgctgca gtgagctcag ccacaggggc ttttaggaga ttccagccgg aggtccgaac    900
    cttcgcagcc agtggctctg gagggcctga gtgacagcgg ccagtcctgt ttgtttgaag    960
    gtttaaaaca attcaattac aaaagcggca agcagccaat gcacgcccct gcatgcagcc   1020
    ctcccgcccg cccttcgtgt ctgtctctgc tgtaccgagg tgttttttac atttaagaaa   1080
    aaaaaaaaag aaaaaaagat tgtttaaaaa aaaaaggaat ccataccatg atgcgtttta   1140
    aaaccaccga cagcccttgg gttggcaaga aggcaggagt atgtatgagg tccatcctgg   1200
    catgagcagt ggctcaccca ccggccttga agaggtgagc ttggcctctc tggtccccat   1260
    ggacttaggg ggaccaggca agaactctga cagagctttg ggggccgtga tgtgattgca   1320
    gctcctgagg tggcctgctt accccaggtc taggaatgaa cttctttgga acttgcatag   1380
    gcgcctagaa tggggctgat gagaacatcg tgaccatcag acctacttgg gagagaacgc   1440
    agagctccca gcctgctgtg gaggcagctg agaagtggtg gcctcaggac tgagagcccg   1500
    gacgttgctg tactgtcttg tttagtgtag aagggaagag aattggtgct gcagaagtgt   1560
    acccgccatg aagccgatga gaaacctcgt gttagtctga catgcactca ctcatccatt   1620
    tctataggat gcacaatgca tgtgggccct aatattgagg ccttatccct gcagctagga   1680
    ggggaggggg ttgttgctgc tttgcttcgt gttttcttct aacctgggca aggagagagc   1740
    caggccctgg gcaaggctcc cgtgccgcct ttgggttcct tgtttttcttg ttgcttgatc   1800
    tggaccatct ttgtctttgc cttttcacgg tagggtcccc atgctgaccc tcatcttggg   1860
    cctgggcctc ttgccaaagt tgcccctg                                       1888
```

```
        <210> 67
        <211> 1712
        <212> DNA
        <213> Homo sapiens
```

```
    <400> 67
cttracccaa gaatgtggta ttcgtgcttg acagcagtgc ttctatggtg ggaaccaaac          60
tccggcagac caaggatgcc ctcttcacaa ttctccatga cctccgaccc caggaccgtt         120
tcagtatcat tggattttcc aaccggatca aagtatggaa ggaccacttg atatcagtca         180
ctccagacag catcagggat gggaaagtgt acattcacca tatgtcaccc actggaggca         240
cagacatcaa cggggccctg cagagggcca tcaggctcct caacaagtac gtggcccaca         300
gtggcattgg agaccggaga gtgtccctca tcgtcttcct gacggatggg aagcccacgg         360
tcggggagac gcacaccctc aagatcctca caacacccg agaggccgcc cgaggccaag          420
tctgcatctt caccattggc atcggcaacg acgtggactt caggctgctg agaaaactgt         480
cgctggagaa ctgtggcctc acacggcgcg tgcacgagga ggaggacgca ggctcgcagc         540
tcatcgggtt ctacgatgaa atcaggaccc cgctcctctc tgacatccgc atcgattatc         600
cccccagctc agtggtgcag gccaccaaga ccctgttccc caactacttc aacggctcgg         660
agatcatcat tgcggggaag ctggtggaca ggaagctgga tcacctgcac gtggaggtca         720
ccgccagcaa cagtaagaaa ttcatcatcc tgaagacaga tgtgcctgtg cggcctcaga         780
aggcagggaa agatgtcaca ggaagcccca ggcctggagg cgatggagag ggggacacca         840
accacatcga gcgtctctgg agctacctca ccacaaagga gctgctgagc tcctggctgc         900
aaagtgacga tgaaccggag aaggagcggc tgcggcagcg ggcccaggcc ctggctgtga         960
gctaccgctt cctcactccc ttcacctcca tgaagctgag ggggccggtc ccacgcatgg        1020
atggcctgga ggaggcccac ggcatgtcgg ctgccatggg acccgaaccg gtggtgcaga        1080
gcgtgcgagg agctggcacg cagccaggac ctttgctcaa gaagccatac cagccaagaa        1140
ttaaaatctc taaaacatca gtggatggtg atccccactt tgttgtggat ttccccctga        1200
gcagactcac cgtgtgcttc aacattgatg ggcagcccgg ggacatcctc aggctggtct        1260
ctgatcacag ggactctggt gtcacagtga acggagagtt aattggggca cccgcccctc        1320
caaatggcca caagaaacag cgcacttact tgcgcactat caccatcctc atcaacaagc        1380
cagagagatc ttatctcgag atcacaccga gcagagtcat cttggatggt ggggacagac        1440
tggtgctccc ctgcaaccag agtgtggtgg tggggagctg ggggctggag gtgtccgtgt        1500
ctgccaacgc caatgtcacc gtcaccatcc agggctccat agcctttgtc atcctcatcc        1560
acctctacaa aaagccggcg cccttccagc gacaccacct gggtttctac attgccaaca        1620
gcgagggcct ttccagcaac tgcagggtct tctgtgagtc tggcatcctg attcaggaac        1680
tgacccagca gtccgtggca gttgctggtc ga                                      1712
```

```
    <210> 68
    <211> 839
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 68
gttttttctc gagcaggtta gccaatatac ctttgctatg tgcagttata gagaaaagaa          60
gtctgaacca caagaattaa tgcagcttga aggctatact gtggattata ccgatcccca         120
cccaggcctt cagggtggtt gtatgttctt taatgctgtt aaagaaggag atactgtaat         180
ctttgccagt gatgatgaac aggacagaat attatgggtt caagccatgt atagggccac         240
aggtcaatca tataaaccag ttcctgcaat tcaaacccag aaaactgaatc ctaaaggagg        300
aactctccat gcagatgctc agctttatgc agatcgtttt cagaaacatg gtatggatga        360
gtttatttct gcaaacccct gcaagcttga tcatgccttc cttttttagaa tactccagag        420
gcagactttg gatcacagac tgaatgattc ctattcttgc ttgggatggt ttagccctgg        480
ccaagtcttt gtgttagatg agtactgtgc ccgttatggt gtgagaggct gtcacagaca        540
tctctgctac cttgcagaac tgatggaaca ttcagaaaat ggtgctgtca ttgaccctac        600
cctgctccat tacagctttg cattctgtgc ctctcgatgt gcacggcaac aggcctgatg        660
gaattgggac tgtttcagtg aagaaaaag aaagatttga ggagataaaa gagagactct        720
cttcccttt agaaaatcag ataagccatt tcagatactg ttttcccttt ggacgacctg        780
aaggtgctct aaaagctaca ctttcattac ttgaaagggt tttaatgaaa gatattgcc        839
```

```
      <210> 69
      <211> 801
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(801)
      <223> n = a,t,c or g


      <400> 69
agacgggctg ctccatgagg tgctgaacgg gctcctagat cgccctgact gggaggaagc      60
tgtgaagatg cctgtgggca tcctcccctg cggctcgggc aacgcgctgg ccggagcagt     120
gaaccagcac gggggatttg agccagccct gggcctcgac ctgttgctca actgctcact     180
gttgctgtgc cggggtggtg gccacccact ggacctgctc tccgtgacgc tggcctcggg     240
ctcccgctgt ttctccttcc tgtctgtggc ctggggcttc gtgtcagatg tggatatcca     300
gagcgagcgc ttcagggcct tgggcagtgc ccgcttcaca ctgggcacgg tgctgggcct     360
cgccacactg cacacctacc gcggacgcct ctcctacctc cccgccactg tggaacctgc     420
ctcgcccacc cctgcccata gcctgcctcg tgccaagtcg gagctgaccc taacccccaga    480
cccagccccg cccatggccc actcacccct gcatcgttct gtgtctgacc tgcctcttcc     540
cctgccccag cctgccctgg cctctcctgg ctcgccagaa cccctgccca tcctgtccct     600
caacggtggg ggcccagagc tggctgggga ctggggtggg gctggggatg ctccactgtc     660
cccggaccca cagctgtctt cacctcctgg ctctcccaag gcagctctac actcacccgt     720
ctaaaaaaag gcccccgtaa ttccccccga catgnnnccc cgctctagag gatcaagcaa     780
ctacgcggcg gctcacgacg c                                               801



      <210> 70
      <211> 531
      <212> DNA
      <213> Homo sapiens




      <400> 70
agaagggtgt cccaaccttg ctcatggcag ctggcagctt ctatgacatt ctggccatca      60
ctggcttcaa cacatgcttg ggcatagcct tttccacagg ctctactgtc tttaatgtcc     120
tcagaggagt tttggaggtg gtaattggtg tggcaactgg atctgttctt ggattttca      180
ttcagtactt tccaagccgt gaccaggaca aacttgtgtg taagagaaca ttccttgtgt     240
tggggttgtc tgtgctagct gtgttcagca gtgtgcattt tggtttccct ggatcaggag     300
gactgtgcac gttggtcatg gctttccttg caggcatggg atggaccagc gaaaaggcag     360
aggttgaaaa gataattgca gttgcctggg acatttttca gcccttctt tttggactaa      420
ttgggagcag aggtatctat ttgcatctct cagaccagaa actgtaggcc tttgtgttgc     480
caccgtaggc atttgcagta ttgatacgaa ttttttgacta catttttctga a            531



      <210> 71
      <211> 540
      <212> DNA
```

32

<213> Homo sapiens

<400> 71

```
tgtgcgagga attcgaatca ggtaatggag aggactggca tgaagggggc acaggactgt      60
gaaaacctga gtgattctgt ccttccctca tcctctatcc ctgaaccagg gcagacatag     120
atggaatcag agcaggagtt ggtgttgatg tggtttcagg tccacctatc agagtttgag     180
agatttaggc catgaaccat tatgaatata gatgagaacc tttgtaattg ctgaaggagg     240
tagtagtgca ggcaagtcct gtgtgcaaga cctgctgctc ccagttagta cggacccctg     300
tgacattcac agaagttcag aatgtctgag atgctctgca ggctacctta tctccgtctg     360
cagctacacc tccagtgatc acaatcagtg ctacgctggc acagccagcc tggccctgct     420
ctggattgga ggcatcctca agggctgctt gctgtggaag cagtttcgct ggaccgagag     480
gagccactgg aattttgggt actgggcctt atggtcaccc gggaatggga atggctgctg     540
```

<210> 72
<211> 428
<212> DNA
<213> Homo sapiens

<400> 72

```
cggacgcgtc cgcccacgcg tccgcccacg cgtccgctag aaatttctgt ggaactccat      60
ttgactttct atctgtgaaa tccaaactgt ctctgaagaa ataagaaaaa tagtgttttg     120
acttttagga gacaactatg tttattattt tgccttgcaa attaatgtct aaatttgtac     180
aagcacctat ctacagattt ttccaggtaa accatcatgt tttatgtgta aaggtagatt     240
gatgtgcatt tactttatac tttggtactt aggccattac acatctttgc actggaattg     300
gtgcagatat ataagtgatc ctaatgttga tgctgcccag accccaggaa tgcagaggtg     360
agcatgacac acacagtccc tgccctgatg gagctcatag actagtgaag gaatagggct     420
ctatgacc                                                             428
```

<210> 73
<211> 584
<212> DNA
<213> Homo sapiens

<400> 73

```
gctggagtca ttgcctggtt tcaaagagat tgtgagcagg ggagtaaaag tggattactt      60
gactccagac ttccctagtc tctcgtatcc caattattat accctaatga ctggccgcca     120
ttgtgaagtc catcagatga tcgggaacta catgtgggac cccaccacca caagtcctt      180
tgacattggc gtcaacaaag acagcctaat gcctctctgg tggaatggat cagaacctct     240
gtgggtcact ctgaccaagg ccaaaaggaa ggtctacatg tactactggc caggctgtga     300
ggttgagatt ctgggtgtca gacccaccta ctgcctagaa tataaaaatg tcccaacgga     360
tatcaatttt gccaatgcag tcagcgatgc tcttgactcc ttcaagagtg ccgggccga      420
cctggcagcc atataccatg agcgcattga cgtggaaggc caccactacg ggcctgcatc     480
tccgcagagg aaagatgccc tcaaggctgg tagacactgt cctgaagtac atgaccaagt     540
ggatccagga gcggggcctg caggaccgcc tgaacgtcat tatt                      584
```

```
<210> 74
<211> 348
<212> DNA
<213> Homo sapiens
```

```
<400> 74
ggcacgagat tttcatccaa aacaaacact ggacttcctg cggagtgaca tggctaattc      60
gaaaatcaca gaagaggtga aaaggagtat agcacaacag tatctagatt tgacagtagc     120
ccggaacaag tggaccctga tgccgaagtc gatgcagccc catctaccac atcttcatgt     180
ggacattgag attcacacgc tggctcctga agggtgctca gtctccttgg tgattaaggt     240
cctgcttgaa ctggtgccaa ctccatggca gggaagttgc ttttggttgc ctggctgggt     300
ttcccagatc ccttctgggg caaggagcta tcagaccctg ctttcaag                  348
```

```
<210> 75
<211> 365
<212> DNA
<213> Homo sapiens
```

```
<400> 75
caagcaaagt ggggatgtca cctgcaactg cactgatggg cgcttggccc ccagctgcct      60
gacctgcgtc ggccactgca tttttggcgg ctactgtacc atgaacagca aaatgatgcc     120
tgaatgccag agcccacccc acatgacagg ccccggtgt gaggagcacg tcttcagcca      180
gcatcagcca ggacatataa cctccatcct aatccctatg ctgtagctgc tgctgctggt     240
tctggtggcc ggagtgatat tctgccataa acggcgagtc caagggcta agggcttcca      300
gcaccaacgg atgaccaacg gggccatgaa cgcgcagatt gcaaacccca cctacaagat     360
gtacc                                                                 365
```

```
<210> 76
<211> 700
<212> DNA
<213> Homo sapiens
```

```
<400> 76
caagaaccat cagcaccaac acaaatgtat ctttgcagac cgaaggaatc agctaaacaa      60
tttacagtca tctcaatctc tactaaaaca aaaatcacat ccaacatgcc acctgacacc     120
atttcttcct ctctctctct tttgctcctt gcgatgaggc attcatctct ccttgagcct     180
ccgttctgaa gagataacag tatagcaaca actctgccac tgaaatcctg ttctctgacc     240
gatattggca cctgcaaaga gaaacaacca gtaacaggca gcagcagcat cagtattaat     300
cttccatgat gaaatcttta caggtcaaga acaagtacac agctcttttc tcactccttc     360
```

```
acagtggacc atgcaactag ttgaggtgga agacaatgga ttgtctacaa gcctttttgaa   420
cagtggagaa tgcagggcgt tggctttagg aagaggcaga aatccaggca gaacttgaac   480
gtttggaaag agtcagaaat cttcacatac gtgagctgaa aagaataaac aatgaagata   540
attcacagtt caaagatcac ccaacattaa atgaaagata tttattactt catctgcttg   600
gtagaggtgg cttttagtgaa gtgtataagg taatgtatgg tttattctgg tttttttaca   660
ctaatgtagc aaggatatag gagtatgtgg ttaagaagtg                          700
```

<210> 77
<211> 426
<212> DNA
<213> Homo sapiens

<400> 77
```
ttgcctagca catggcaggg tgcagcgcct gtctgaatgt gtgaagagtt cttagtgatg    60
ggtaaagggt gttcctgtgt gttttagatt ctgctcagca atcctcagat gtggtggtta   120
aatgattcca atcctgaaac cgacaaccgt caagaaagtc cttcccagga aaacattgac   180
cgagtgagtg acaggccttt gtgccctcag cttggacagc ctcgggtggg gttgcttggg   240
gtaacctggg tgaatcaggc agcaggactg ggggagtccg tgctgaaacc ttggctccca   300
ggctccaggt gtaacctgcc cacctcagag gccacccacg cagtaacaga gggcagggga   360
ggcctccttg gaaagcagga aaactgggga agtgtcagga agttctcttt aggtttgctg   420
cctttg                                                              426
```

<210> 78
<211> 358
<212> DNA
<213> Homo sapiens

<400> 78
```
tttcgtgcta tgttcttggc tgttcaacac gactgcagac ccatggacaa gagcgcaggc    60
agtggccaca agagcgagga gaagcgagaa aagatgaaac ggacccctttt aaaagattgg   120
aagacccgtt tgagctactt cttacaaaat tcctctactc ctgggaagcc caaaaccggc   180
aaaaaaagca aacagcaagc tttcatcaag taagttgaga atcctgagct tgcaaatatc   240
aatagttagc tgctgaactg aaaaggggaa ctctgatgag cgtaagctaa catacagaac   300
ctctcttgca ggccttctcc tgaggaagca cagctgtggt cagaagcatt tgacgagg     358
```

<210> 79
<211> 322
<212> DNA
<213> Homo sapiens

```
    <400> 79
gggttttttca attttttccag cccaaagtta aaaggttgga aaatcaattc ctctttggtc      60
ctagagataa ggaagaacat acttcgtttc ttagatgcag aacgagatgt gtcagtggtc      120
aagagcagtt ttccaagcaa agacgccaga cactccagtg tgcaccggta gttcacccaa      180
ctgcattggg gaccgccctc tcatactcca gccaggccgt gacgtgaccg acctccgact      240
tctgcgcaaa ggcagcgcaa gccgttggga tcccctgctc cccctcgctc aacagtcggg      300
ccattacacc tttcatactg cg                                                322
```

```
    <210> 80
    <211> 310
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 80
cgaaagcacg ccagaaaaca aaataaaagc aatacataac cacaaaaata atagcgtata      60
gatgatcaac aagaattaaa acgcgtaaca tagtatagtc aaaaagaata cacgaaaaag      120
aaactccata aaaaatgcaa tatcatacag gcagatatca agccagacaa tatcctggat      180
aatgaatcca taactattct aaagcttagc gattttgggt cggcttcaca tgttgcggat      240
aatgacataa caccttcatc ttctcagacc acatccgctg catcatcgcc cccgcggacg      300
ctacgccgcg                                                             310
```

```
    <210> 81
    <211> 134
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 81
tcgagtaaac catgggacta aagcttggct ccaaagcatt caggctgaac gaaaaacatg      60
gactgctatt gcataatacc aacgtgcatt ggacgagaac gatgctatgg aacctgcata      120
ggcgacacgg tcgg                                                        134
```

```
    <210> 82
    <211> 358
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 82
ctctgggaga gaaagactaa tgggcaggat cccattactt cattggtaaa gatagtcgga      60
tactctcacc acttttaata cctttagtat tacagttgat cagattacct ttacttgata      120
tgaattattt ctaagttcat tcccctgtgt tgtagcttat ttcaacaatt ccaactagcc      180
```

```
gtttaaaatt cctcaaagaa actggtcatg gaacaccaat ggaagaaata cctgaggagg      240
aattatcaga ggatgttgaa cagattgatc acgctgatag ggagttgcgg cgtggccaaa      300
acttgaggtg caaaggaatt catagattgc ctactcatat acaagtaggg caaaatcg        358
```

<210> 83
<211> 723
<212> DNA
<213> Homo sapiens

<400> 83
```
tacacacaca cacacacaca cacacacact cactctctca gaggagagaa aatattaaga       60
atcgtgtatt ttacacaggt atccaaacat aaaaatactt tagaattgct tactgtatgg      120
acaggttata tggaatggag tttgtagtat ccacattaac aaagcaagtt tatatggact      180
ggttatgata ttagggatat gaattagaaa tggatgttgt tgcactcatt taaaatattt      240
tgcctctcac tttatcccca gttatagtgt ccttttgaat ttttctcaca cagtgctact      300
atatttcatg aactggtata taaacaaacc aaaattattt cttcaaatca agaacttatc      360
tacgaagggc gacgcttagt cttagaacct ggaaggctgg cacaacattt ccctaaaact      420
actgaggaaa accctatatt tgtagtaagc cgggaacctc tgaataccat aggattaata      480
tatgaaaaaa tttccctccc taaagtacat ccacgttatg atttagacgg ggatgctagc      540
atggctaagg caataacagg ggttgtgtgt tatgcctgca gaattgccag taccttactg      600
ctttatcagg aattaatgcg aaaggggata cgatggctga ttgaattaat taaagatgat      660
tacaatgaaa ctgttcacaa aaagacagaa gttgtgatca cattgggatt tctggtatcc      720
aga                                                                    723
```

<210> 84
<211> 407
<212> DNA
<213> Homo sapiens

<400> 84
```
ggcacgagga aaatgggacc caccgtctct cccatctgcc taccaggcac ctggggcgac       60
tacaacctca tggatgggga cctgggactg atctcaggct ggggccgaac agagaagaga      120
gatcgtgctg atcgcctcaa ggcggggagg tcacccgcag ctgggtaaag aaaatgggaa      180
cccgggagag gggaccctac gtgggaagaa tcagaggaag atgtacataa gagtaagtgg      240
acaagatgtg tggatgagaa gggcgcgtag tgctaaacag acaataagag accgctcagg      300
tgtggggtga cctaatgggg agacgtggaa tatgtttggt ggcacggagg aaagtctaat      360
ggatatcgtg tttaggagga cgatggagtc ttacgtgctc gttgatg                    407
```

<210> 85
<211> 342
<212> DNA
<213> Homo sapiens

```
    <400> 85
ggcacgagct cgaaaattta atcaagagtg cgcactctta ttccctttac tgagggtaat      60
atctacacgg agcctagaca gccgaaccag aggcttcctt ttgtccaaga agaggatgga     120
atagacaagc tggagctgct ggctcccgga tgaatttcag acctggggtt ctcagctcca     180
ggcaacttgg actcccagga cctcctgacg gtcctgacta tactgtttac tacccgttcc     240
atcgacttgc catggtgact gctgcctcac gattggagcg tgaacacctt acgcatctat     300
gacactaggg atacaatgga gaggtataga gcaaccctag cg                        342
```



```
    <210> 86
    <211> 420
    <212> DNA
    <213> Homo sapiens
```



```
    <400> 86
cgctccgcag gtttagcacc gactgtagct ctgatcagca ggaccgatta aacggaactg      60
cccctagcgg ttttaaccgc tcctgaccag tcccgttgcc gcaccccatc ttggaagtat     120
gccctggcca gtaggagcca caaagcgcga ttagcctcac tgcatttcag gtacaggccg     180
gcgccagccg tgcctcacca ggtccaccgg ctccgagcag cagcaagccc ggtcggaaag     240
cgaaagtggc ctcgccatgt ccagaccggc cagctccccc gcctacctga ccccgccccg     300
cagccgcacc tgggtccgag tcatcgccgc ggccgccacg gccccgcaca ggaaggcggc     360
agcaaagagc gcacgctcga cgcgctgcag ccaggacagc gccatggcgc ccctcgtgcc     420
```



```
    <210> 87
    <211> 392
    <212> DNA
    <213> Homo sapiens
```



```
    <400> 87
ggcacgaggg gagaaggcgg ggctgggcct cagcttccca aaggtttttg aggaactggg      60
cttttctgac accctcaaag gtcagaaggt taaaggggca gaaggcattc ggaaagctcc     120
cctcccacag tgacacctct ctgacttctg acctagggtt ccaccaccgc ttcaatccca     180
atgcctccag ctccttcaag cccagtggga ccaagtttgc cattcagtat ggaactgggc     240
gggtagatgg aatcctgagt gaggacaagc tgactgtgag tggcctttga ctccaggaag     300
cctcgagcct gggagaaccc tgttgtctaa gatcatctgg cttagggagg ggcttgaggt    .360
gcaggggctt cctgagccga tggatggggc tt                                   392
```



```
    <210> 88
    <211> 332
    <212> DNA
    <213> Homo sapiens
```

38

<400> 88

```
gggaggaata taatgcatta cccaaatggt catgccatat gtattgcaaa tggacattgt        60
atcatcttgt gaaatagtca taacattaaa gtttgggtat agtagttagc atattttcat       120
ggccagtatt gatgctattt tttcccttac ctatcagact ctttcaaaga gaaaagaggg       180
agcagttgga attttatgtt tgttgttcta ttttgtctat tatgaattgt gacaaaacca       240
ttataaaaga tgacaagtgt gtgtgtttct ttttttcttt ttaaactgta gggaacatag       300
tcattagtga tctcaaatac cgaaagacat tt                                     332
```

<210> 89
<211> 535
<212> DNA
<213> Homo sapiens

<400> 89

```
attaacctag gaaatacatg ttatatgaac agtgttattt aagccttgtt tatggccaca        60
gatttcagga gacaagtatt atctttaaat ctaaatgggt gcaattcatt aatgaaaaaa       120
ttacagcatc tttttgcctt tctggcccat acacagaggg aagcatacgc acctcggata       180
ttctttgagg cttccagacc tccatggttt actcccagat cacagcaaga ctgttctgaa       240
tacctcagat ttctccttga caggctccat gaagaagaaa agatcttgaa agttcaggcc       300
tcacacaagc cttctgaaat tctggaatgc agtgaaactt ctttacagga agtagctagt       360
aaagcagcag tactaacaga gacccctcgt acaagtgacg gtgagaagac tttaatagaa       420
aaaatgtttg gaggaaaact acgaactcac atacgttgtt tgaactgcac gagtacctca       480
caaaaagtgg aagcctttac agatctttcg cttgcctttt ggccttcctc ttctg           535
```

<210> 90
<211> 432
<212> DNA
<213> Homo sapiens

<400> 90

```
gcccgggacg acccacgcgt acgactcagt ttaagtccaa actttctaat aatttgatgt        60
agcagcgtaa tgggctgcat tactagtgag ttccttatgt gagtgtgcga gcatatgctg       120
gatgacttat ctagaataat gtagaagaga attaaacatt gaatgggagc ttaaattagt       180
taatttctga ggttcccttc cattcttaga attctttgat ttttatattg aattgagaga       240
actagtatag tttttatttc agcaaattat aacaccattg ttctcaaggc atggaaaatg       300
tgcttttcat cttttaagata ctaaaccttt tcactcatgg caattttttt tagctagcct      360
ctaagcttgg aaagcagtgg accccattaa taatcctggc caactctctt agtggaacta       420
atatgggaga ag                                                           432
```

<210> 91

```
      <211> 780
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(780)
      <223> n = a,t,c or g




      <400> 91
ccatgcatag gattaaactg aatgatcgaa tgacatttcc cgaggaacta gatatgagta      60
cttttattga tgttgaagat gagaaatctc ctcagactga aagttgcact gacagtggag     120
cagaaaatga aggtagttgt cacagtgatc agatgagcaa cgatttctcc aatgatgatg     180
gtgttgatga aggaatctgt cttgaaacca atagtggaac tgaaaagatc tcaaaatctg     240
gacttgaaaa gaattccttg atctatgaac ttttctctgt tatggttcat tctgggagcg     300
ctgctggtgg tcattattat gcatgtataa agtcattcag tgatgagcag tggtacagct     360
tcaatgatca acatgtcagc aggataacac aagaggacat taagaaaaca catggtggat     420
cttcaggaag cagaggatat tattctagtg ctttcgcaag ttccacaaat gcatatatgc     480
tgatctatag actgaaggat ccagccagaa atgcaaaatt tctagaagtg gatgaatacc     540
cagaacatat taaaaacttg gtgcagaaag agagagagtt ggaagaacaa gaaaagagac     600
aacgagaaat tgagcgcaat acatgcaaga taaaattatt ctgtttgcat cctacaaaac     660
aagtaatgat ggaaaantaa attgaggttc ataaggataa gacattaaag gaagcagtag     720
aaatggctta taagatgatg gatttagaag aggtaatacc cctggattgc tgtcgccttg     780




      <210> 92
      <211> 867
      <212> DNA
      <213> Homo sapiens




      <400> 92
ctcagtcatg ccagtgcctg ctctgtgcct gctctgggcc ctggcaatgg tgacccggcc      60
tgcctcagcg gcccccatgg gcggcccaga actggcacag catgaggagc tgaccctgct     120
cttccatggg accctgcagc tgggccaggc cctcaacggt gtgtacagga ccacggaggg     180
acggctgaca aaggccagga acagcctggg tctctatggc cgcacaatag aactcctggg     240
gcaggaggtc agccggggcc gggatgcagc ccaggaactt cgggcaagcc tgttggagac     300
tcagatggag gaggatattc tgcagctgca ggcagaggcc acagctgagg tgctgggggga     360
ggtggcccag gcacagaagg tgctacggga cagcgtgcag cggctagaag tccagctgag     420
gagcgcctgg ctgggccctg cctaccgaga atttgaggtc ttaaaggctc acgctgacaa     480
gcagagccac atcctatggg ccctcacagg ccacgtgcag cggcagaggc gggagatggt     540
ggcacagcag catcggctgc gacagatcca ggagagactc cacacagcgg cgctcccagc     600
ctgaatctgc ctggatggaa ctgaggacca atcatgctgc aaggaacact tccacgcccc     660
gtgaggcccc tgtgcaggga ggagctgcct gttcactggg atcagccagg gcgccgggcc     720
ccacttttga gcacagagca gagacagacg caggcgggga caaaggcaga ggatgtagcc     780
ccattgggga ggggtggagg aaggacatgt accctttcat gcccacacac ccctcattaa     840
agcagagtca aggcatctca aaaaaaa                                         867




      <210> 93
      <211> 690
```

<212> DNA
<213> Homo sapiens

<400> 93
tcggaaccgc cctgaattac ctctgtcgac ccacgcgtcc ggggaaacgc ttctacagga   60
tatggaaaaa tttggctcga tgatgtttcc tgtgatggag atgagtcaga tctctggtca   120
tgcaggaaca gtgggtgggg aaataatgac tgcagtcaca gtgaagatgt tggagtgatc   180
tgttctgatg catcggatat ggagctgagg cttgtgggtg gaagcagcag gtgtgctgga   240
aaagttgagg tgaatgtcca gggtgccgtg ggaattctgt gtgctaatgg ctggggaatg   300
aacattgctg aagttgtttg caggcaactt gaatgtgggt ctgcaatcag ggtctccaga   360
gagcctcatt tcacagaaag aacattacac atcttaatgt ccaattctgg ctgcgctgga   420
ggggaagcct ctctctggga ttgtatacga tgggagtgga aacagactgc gtgtcattta   480
aatatggaag caagtttgat ctgctcagcc cacaggcagc ccaggctggt tggagctgat   540
atgccctgct ctggacgtgt tgaagtgaaa catgcacaca catggcgctc tgtctgtgat   600
tctgatttct ctcttcatgc tgccaatgtg ctgtgcagag aattaaactg tggagatgcc   660
atatctcttt ctgtgggaga tcactttggg   690

<210> 94
<211> 948
<212> DNA
<213> Homo sapiens

<400> 94
cgagtggcga ggttcatcat ggaggcagac ggagtctcgc tctgttggcc aggctggagt   60
gcaggggcgt gatctcggct cactgcaacc tccgtctccc ggactaaagc aattatcctt   120
cctcacgctt ccgagtagct ggaattacag gtgtcaagct agggatgcgg tccattccca   180
ttgccactgc ttgcaccatt taccataagt tcttttgcga gaccaacctg gacgcctatg   240
accccttacct gattgccatg tcttcaattt acttggccgg caaagtggaa gagcagcacc   300
tgcggactcg tgacatcatc aatgtgtcca acaggtactt taacccaagc ggtgagcccc   360
tggaattgga ctcccgcttc tgggaactcc gggacagcat cgtgcagtgt gagcttctca   420
tgctgagagt tctgcgcttc caggtctcct tccagcatcc acacaagtac ctgctccact   480
acctggtttc cctccagaac tggctgaacc gccacagctg gcagcggacc cctgttgccg   540
tcaccgcctg ggccctgctg cgggacagct accatggggc gctgtgcctc cgcttccagg   600
cccagcacat cgccgtggcg gtgctctacc tggccctgca ggtctacgga gttgaggtgc   660
ccgccgaggt cgaggctgag aagccgttgg gtggcagatt tatgccatgg acacagagat   720
cccctaaggt cctggcccag gcctgcccaa agagaagcca catctgcgtt tgtcctttga   780
gaggactttg actacaatac aggcatgaca tcaatgaaag gaaagtcatg aaatcgatga   840
gactgaatcc ctacggattt cttaaaagcc agatttgtag ggagaatgaa tgtgcaacgt   900
ggctgaaatc tattttgtgt aataaaaggt gatacaagtc aaaaaaaa   948

<210> 95
<211> 541
<212> DNA
<213> Homo sapiens

```
<400> 95
ttagtttata aagaaaagac atttaattgg ctcatagttc tgcaggctgt acaggaagca      60
tagtagcttc tgcttctggg gaggcctcag gaaacttaca atcacagcag aaggtgaagg     120
ggaagcaggc acgccgtaca tggctgggct ttcggcctcc tcttcatcaa caaggagtcg     180
gtggtcatgg cctatctctt caccaccttc aacgccttcc aggggggtctt catcttcgtc    240
tttcactgcg ccttacagaa gaaggtgagg tcgaggcggg gtcctgggtc acagcctccc     300
ttggagacgt ttcctgggta cccaggagaa ggcggcgagg gtggagggga ctcagggget     360
ccctcaagcc cccagtgagt gctgcaggc ttctgtggtc aggtctgcgt cccccgggag      420
gggagcacga gctcagggtt agggagggtt taaccacggg tgaagagggt tctgttgaca     480
gacgctgagg ccgcaaacgc tcctcctctc tcttcacact cgccaacacc gcggtggcgc     540
t                                                                     541
```

```
<210> 96
<211> 603
<212> DNA
<213> Homo sapiens
```

```
<400> 96
cagcccgtaa ggatgatcta cctccaaata tgagattcca tgaggagaag aggctggact      60
ttgaatggac actgaaggca gggtgagaaa aaggctagcc ctcgaagtga aataagggct     120
gggagggcca agaatgatga tagacggtga gggactgagg gatcagctga tgagttaagc     180
ctcaacacct gtcctagggc tttgcagatg gccctcaaac gtgtttacac cctcctgagc     240
tcctggaact gcctagaaga ctttgatcag atcttctggg gccagaagag tgccctggct     300
ggtcagtggt tccccgaggt ctccataatc ccttaatggc ccctctggat gactcatcac     360
actccacagt cccccgtaac tctttgcaag aagagacctt atcatatctg gtcaactcag     420
agaggccttg agaatgaaaa cgcagaagct gggttcaggg agggttatat acctgaaccc     480
ctggggtaga ttttggagaa gggatatgca ggctgtggta catatatcct cctttcaccg     540
cccaccaaag agaacgttcg ccagtgctgg caggatgatg agttgttcag cttccctcgt     600
gcc                                                                   603
```

```
<210> 97
<211> 1385
<212> DNA
<213> Homo sapiens
```

```
<400> 97
tctttcagca aggtgggggc aagcagaatg cctcccagga tttcacacct gagccctgcc      60
ccaccctgct gagaaaacac tccgccacgt gaagagacag aggaggatgg caggagttac     120
ctcgggaaac aaacaggatc ttctctgccc tgctccagtc gagttggcct gacccgcttg     180
gatcagtgac catttgctgg cagacagggg agagcagctt ccagcctggg tcagaagggg     240
tgggcgagcc cctcggcccc tcaccctcca ggctgctgtg agagtgtcaa gtgtgtaagg     300
gcccaaactc aggttcagtg cagaaccagg tcagcaggta tgcccgcccg tacgttaagg     360
gggccctcta aaccccttgc ctggcctcac ctggccagct cacccctttt gggtgtaggg     420
gaaaagaatg cctgaccctg ggaaggctcc ctggtagaat acaccacact tttcaggttg     480
ttgcaacaca ggtcctgagt tgacctctgg ttcagccaag gaccaaagaa ggtgtgtaag     540
tgaagtggtt ctcagtcccc agacatgtgc ccctttgctg ctggctacca ctcttcccca     600
gagcagcagg ccccgagccc cttcaggccc agcactgccc cagactcgct ggcactcagt     660
```

```
tccctcatct gtaaaggtga agggtgatgc aggatatgcc tgacaggaac agtctgtgga   720
tggacatgat cagtgctaag gaaagcagca gagagagacg ctccggcgcc ccagccccac   780
tatcagtgtc cagcgtgctg gttccccaga gcacagctca gcatcacact gacactcacc   840
ctgccctgcc cctggccaga gggtactgcc gacggcactt tgcactctga tgacctcaaa   900
gcactttcat ggctgccctc tggcagggca gggcagggca gtgacactgt aggagcatag   960
caagccagga gatggggtga agggacacag tcttgagctg tccacatgca tgtgactcct  1020
caaacctctt ccagatttct ctaagaatag cacccccttc cccattgccc cagcttagcc  1080
tcttctccca ggggagctac tcaggactca cgtagcatta aatcagctgt gaatcgtcag  1140
ggggtgtctg ctagcctcaa cctcctgggg caggggacgc cgagactccg tgggagaagc  1200
tcattcccac atcttgccaa gacagccttt gtccagctgt ccacattgag tcagactgct  1260
cccggggaga gagccccggc ccccagcaca taaagaactg cagccttggt actgcagagt  1320
ctgggttgta gagaactctt tgtaagcaat aaagtttggg gtgatgacaa atgttaaaaa  1380
aaaaa                                                             1385
```

<210> 98
<211> 2191
<212> DNA
<213> Homo sapiens

<400> 98

```
accaccaccc gtgcgggggg atatctgagc catttctctg tgggcttttg tttttcaaag    60
actgggcagg ttgttgttga ggtgtgtgtg ggctgccacg attttgtgga agtataatac   120
tttgtcatta tgagatgtcg tctctcggtg cctcctttgt gcaaattaaa tttgatgact   180
tgcagttttt tgaaaactgc ggtggaggaa gttttgggag tgtttatcga gccaaatgga   240
tatcacagga caaggaggtg gctgtaaaga agctcctcaa aatagagaaa gaggcagaaa   300
tactcagtgt cctcagtcac agaaacatca tccagtttta tggagtaatt cttgaacctc   360
ccaactatgg cattgtcaca gaatatgctt ctctgggatc actctatgat tacattaaca   420
gtaacagaag tgaggagatg gatatggatc acattatgac ctgggccact gatgtagcca   480
aaggaatgca ttatttacat atggaggctc ctgtcaaggt gattcacaga gacctcaagt   540
caagaaacgt tgttatagct gctgatggag tattgaagat ctgtgacttt ggtgcctctc   600
ggttccataa ccatacaaca cacatgtcct tggttggaac tttcccatgg atggctccag   660
aagttatcca gagtctccct gtgtcagaaa cttgtgacac atattcctat ggtgtggttc   720
tctgggagat gctaacaagg gaggtcccct ttaaaggttt ggaaggatta caagtagctt   780
ggcttgtagt ggaaaaaaac gagagattaa ccattccaag cagttgcccc agaagttttg   840
ctgaactgtt acatcagtgt tgggaagctg atgccaagaa acggccatca ttcaagcaaa   900
tcatttcaat cctggagtcc atgtcaaatg acacgagcct tcctgacaag tgtaactcat   960
tcctacacaa caaggcggag tggaggtgcg aaattgaggc aactcttgag aggctaaaga  1020
aactagagcg tgatctcagc tttaaggagc aggagcttaa agaacgagaa agacgtttaa  1080
agatgtggga gcaaaagctg acagagcagt ccaacacccc gcttctcttg cctcttgctg  1140
caagaatgtc tgaggagtct actttgaat ctaaaacaga ggagtcaaac agtgcagaga  1200
tgtcatgtca gatcacagca acaagtaacg gggagggcca tggcatgaac ccaagtctgc  1260
aggccatgat gctgatgggc tttgggggata tcttctcaat gaacaaagca ggagctgtga  1320
tgcattctgg gatgcagata aacatgcaag ccaagcagaa ttcttccaaa accacatcta  1380
agagaagggg gaagaaagtc aacatggctc tggggttcag tgattttgac ttgtcagaag  1440
gtgacgatga tgatgatgat gacggtgagg aggagtataa tgacatggat aatagtgaat  1500
gaaagcagaa agcaaagtaa taaaatcaca aatgtttgga aaacacaaaa gtaacttgtt  1560
tatctcagtc tgtacaaaaa cagtaaggag gcagaaagcc aagcactgca tttttaggcc  1620
aatcacattt acatgaccgt aatttcttat caattctact tttattttg cttacagaaa  1680
aacgggggga gaattaagcc aaagaagtat atttatgaat cagcaaatgt ggtgcctgat  1740
tatagaaatt tgtgatccta tatacaatat aggacttta aagttgtgac attctggctt  1800
tttctttta tgaatacttt ttagtttgta tttgacttta tttccttt at tcaaatcatt  1860
tttaaaaact tacattttga acaaacactc ttaactccta attgttcttt gacacgtagt  1920
aattctgtga catactttt ttttcttata gcaatacact gtaatatcag aaatggttgg  1980
cctgagcaac ctagtaagac ctcgtctcta ctaataatta aaaaactagc tggcatggta  2040
gcacacacct gtagtcccag atacttggga ggccaaggca ggaggattgc ttgagaccta  2100
gcaatcagtc agggctgcag tgagccatga tggcaccact gcactctagc ctgggcaaga  2160
```

gaacaagatc ctgtctcaaa aaacagggaa a   2191

```
        <210> 99
        <211> 335
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(335)
        <223> n = a,t,c or g


        <400> 99
ggcacgaggc tgaacttcag gtggatgatg agacaaaata gaccgatagg aatcgtctgg        60
ctatatactc cttgttgcca ctgctgagtg actagactgg cccagagatc cgcggtgcac       120
atgctggccg ctcctccctc agaaaaaggc aatggcctaa atactgttta aatgacctga       180
ctcgatgctg tgggaaactg gctgctctgc tgcatgccgt gtgactgtca gtccaaccgt       240
tacatttgcc acgttctcca cacgggggat agacgcaatg cgcccaggtc ccagttttct       300
ttggaggcag cagctctcgc agggctgaat gttgn                                   335




        <210> 100
        <211> 348
        <212> DNA
        <213> Homo sapiens




        <400> 100
cctactctgg gggatcaacc agatcttcat tccataactc gtgcttctcg tcctaaatta        60
tgtactagaa aaaattgtaa tcctcttact ataactgtcc atgaccctaa ttcaactcag       120
tagtattatg gcatgtcatg ggaattaaga ttttatatcc caggatttga tgttgggact       180
atgttcacca tccaaaaaat cctggtctca tggagcccac ccaagccaat cgggccttta       240
actgatctag gtgaccctat gttccagaaa ccccctaaca aagttgattt aactgttcct       300
ccaccattct tagtcataaa agatacactc caaaagttcg agaaaatc                     348




        <210> 101
        <211> 416
        <212> DNA
        <213> Homo sapiens




        <400> 101
agcctcaata atgtaacact gccccaagcg aaaacagaaa aagatttcat ccaactctgc        60
```

44

```
acccctggggg taattaagca agagaaactg ggcacagttt actgtcaggc aagctctcct    120
ggagcaaata tgattggtaa taaaatgtct gccatttctg ttcacggtgt gagtacctct    180
ggaggacaga tgtaccacta tgacatgaat acagcatccc tttctcaaca gtaggatcag    240
aagcctattt ttaatgtcat cccaccaatt cccgttggtt ctgaaaattg gaataggtgt    300
caaggatctg gagatgacaa cttgacttcc ttggggactc tgaatttccc tggtcgaacg    360
gtttctttt ctttgagat ggagtctcgc tctgtcgccc aggctggagt gcagtg         416
```

```
        <210> 102
        <211> 352
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 102
acgcgtccga caaaaacaac aacagatggg gaaactgaaa gtgcatagca caaaatgcgg     60
actaattctg aaatcaccaa tatgtatctg tgcttgggaa atagaggcat acacaggaat    120
gcagatgccc acacactcac attcacactc acactcactc tcacactcac tctcacactc    180
actctcactc gcactctcac actacaccga gatgctcaca cactcagcct ccccatgccc    240
aggcccctgc tctttgttaa tcataagaag accgtggaca acccacctgg aaactatgtg    300
cccacagacc cagactgaag gtgataaaag agggtggctg gcttggggggc tg           352
```

```
        <210> 103
        <211> 702
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 103
aaagcaggtg cctggaaaag cctgctgagg gtgaaggggga accatccagt gtcctgggtt     60
ggggaagcat tttcctcttt atgagtctgt ctctggtcct catggaacaa aagtgggcag    120
tggtggtatg agaagcagag gctaattgtc tacccctgc ctccaagtag aattactcct     180
tgtctgtgta cctggtgagg cagttgactg caggaaccct tctacaaaaa ctcagagcaa    240
agggtatccg gaacccagac cactcgcggg cactgagtga gtaacatctt tcctctcttc    300
cccacctgat ctggattcaa gtcttcctgg ccctccagcc ttcataatta aacccatacc    360
tcttttttga caacttactc cccttctcac atgaacccca accctcccc tctaccctg      420
accagtcttc cagtctttat agttgaagtt ggaccactcc caggcaccct tgaatttcca    480
atcatgtatc tgctttgcac ctcacagtcc ctaactccag ccctgctaga atatgggctc    540
tccggactgg aaagaatctt aggggtcctc taatctaacc ctcacatgat gcttcaactc    600
ctccagatca tctctaacat agccagagtg tcacgctatg tttaagcatc ttcagggatg    660
ggaaaatccc ccacacccat gtattgcggc cgctctagag ga                      702
```

```
        <210> 104
        <211> 689
        <212> DNA
        <213> Homo sapiens
```

<400> 104
ggcaacatac attgtggact ttggcttcag tacaacattc agagaggggc agatgctgac   60
agctttttgt ggcatgtacc cctacgtggc cccagaacgc tccctgggcc aggcatgcca   120
gtgacccgcc agggacatac aaagcctcag tgtcatactg tatttcagga atacagtagg   180
tagaagggcc aggactttgc ccttttactc agggaagcct ccaaacttca agaaaaaatt   240
ctcacaggaa gatatcatgc cccaccactt cttgcccttc aacttgactc attaaaaaat   300
tactaatgct gaacgccagg aagtgtcctt cactgtaact gatgaaaaat ccatgggtga   360
aaagtagcca gaagatgcca ctgataccat acgaagagcc actcctggac caccccaaac   420
aatccagctc atggtggcca tgggatttca ggccaagaac atctctgtgg caatcataga   480
aagaaaattc aactatccca tggccaccta cctcatttta gagcacacaa aacaagagag   540
gaagtgctcc accatcagag aactgtccct tcctcccggg gttcccacct ctccttcccc   600
atccactgaa ctttccacct tccctctctc actgatgcgg gctcataggg agccagcttt   660
taacgttcag cctcccgaag aaagccagg   689

<210> 105
<211> 776
<212> DNA
<213> Homo sapiens

<400> 105
agcaaagcag gagctggcca agctgatgcg gattgaggac ccctccctcc tgaacagcag   60
agtcttgctg caccacgcca aagctggcac catcattgcc cgccagggag accaggacgt   120
gagcctgcac ttcgtgctct ggggctgcct gcacgtgtac cagcgcatga tcgacaaggc   180
ggaggacgtg tgcctgttcg tagcgcagcc cggggaactg gtggggcagc tggcggtgct   240
cactggcgaa cctctcatct tcacactgcg agcccaacgc gactgcacct tcctgcggat   300
ctccaagtcc gacttctatg agatcatgcg cgcacagccc agtgtggtgc tgagtgcggc   360
gcacacggtg gcagccagga tgtcgccctt cgtgcgccag atggacttcg ccatcgactg   420
gactgcagtg gaggcgggac gcgcgctgta caggtgcagc tcccaccgcg ctgctcaggc   480
ccggcctagg ggtggggacc tggggggtgt cagaccttgc tgacctccac gcccactcag   540
gcagggcgac cgctccgact gcacttacat cgtgctcaat gggcggctgc gtagcgtgat   600
ccagcgaggc agtggcaaga aggagctggt gggcgagtac ggccgcggcg acctcatcgg   660
cgtggtgagc gcgaccccca cccactgacc tctggccttt tccaggccag tccctcggca   720
actcacacgc atcatcccgg gtaatccagg gagtggtgaa gtttttcccg gggctc   776

<210> 106
<211> 707
<212> DNA
<213> Homo sapiens

<400> 106
cccacgcgtc cggatggacc ccaggaacca cccagacctt aggacagggg acagcatggg   60
acacagttgc ttccactcca ggaaccagcg agactacagc ttcagctgag ggaagacgaa   120
ccccaggagc aaccaggcca gcagctccag ggacaggcag ctgggcagag ggttctgtca   180
aagcacctgc tccgattcca gagagtccac cttcaaagag cagaagcatg tccaatacaa   240

46

```
cagaaggtgt ttgggagggc accagaagct cggtgacaaa cagggctaga gccagcaagg      300
acaggaggga gatgacaact accaaggctg ataggccaag ggaggacata gaggggggtca    360
ggatagctct tgatgcagcc aaaaaggtcc taggaaccat tgggccacca gctctggtct      420
cagaaacttt ggcctgggaa atcctcccac aagcaacgcc agtttctaag caacaatctc      480
agggttccat tggagaaaca actccagctg caggcatgtg gaccttggga actccagctg      540
cagatgtgtg gatcttggga actccagctg cagatgtgtg gaccagcatg gaggcagcat      600
ctggggaagg aagcgctgca ggggacctag atgctgccac tggagacaga ggtccccaag      660
caacactgag ccagaccccg gcagtatgac cctggggacc ccctggg                     707
```

```
            <210> 107
            <211> 485
            <212> DNA
            <213> Homo sapiens

            <220>
            <221> misc_feature
            <222> (1)...(485)
            <223> n = a,t,c or g



            <400> 107
ccgctggaac atcaggtact ggggacactg gccctggtaa cacagcagtc tcaggcacac       60
ctgtggtatc acctggagca actcctggag ctccaggtag cagcacccct ggggaagcag      120
acattggaaa caccagtttt ggaaaatcag ggaccccaac agtatctgct gcctcaacta      180
ccagtagccc tgtgagtaaa cacaccgatg cagcctcagc cacagcagtg acaatctctg      240
gaagcaaacc aggtacacct ggaacaccag gtggtgcaac tagtggaggc aaaattacac      300
ctggaattgc atgacccacc ctggaccaaa agagcccctg cttctccggg tatggaggtt      360
atttccctgt aaatcctcac cagaacccat gtgctgattc cctgtaatct tcccacaata      420
aatttttagc agctctgnnn nnnnnnnnnn nggggcgccc gtttttaaggg acccaccttt     480
actcg                                                                    485
```

```
            <210> 108
            <211> 565
            <212> DNA
            <213> Homo sapiens



            <400> 108
cgggctcacc gctgctgtct cccgctccca agtctttctt gtgaaatcca aattggattc       60
tcttgatctt ccatctttcc agggcagtga gcttgtcctt gttcctgctg cagaagttgt      120
agaaggaact ggcctcagag cccacgctgt cctcatcatc ctcccgcacc ctgctccctg      180
cttctgagct cctgtctgcc gcctcctctc tcttgctctt ggcgtggtac ctccgggaag      240
cctccttctc aatctccagc agcctctcgt tccatgcgtc ccaggtgctc tccgaggaca      300
tcgagtctgc gcggcgcctc ctgccgtggt ccgggcggtt cagctccagc tgctgcttca      360
ggacccagat gtcgtggctg ctcacgctct cccaggcgct gctctcgctc agggtgcgcc      420
gccgcctccc caccgaggag ccagcgtcgc tctcctcctc tttctcctcc tcccttcccc      480
acctccggta cccttctgct aaaaacctct cgtttcggct ctgccactcg tgaatgatcc      540
tctccacgtc ctcgtcctcg acccg                                              565
```

47

<210> 109
<211> 986
<212> DNA
<213> Homo sapiens

<400> 109

```
ggatgacgtg  ccgccccccgg  ctcctgacct  ctacgacgtg  ccccctggct  tgcggcggcc   60
tggcccgggc  accctgtacg  atgtgccccg  tgaacgggtg  cttcctcctg  aggtggctga  120
tggtggcgtg  gtcgacagtg  gtgtgtatgc  ggtgcctccc  ccagctgaac  gtgaagcccc  180
ggcagagggc  aagcgcctgt  cggcctccag  caccggcagc  acacgcagca  gccagtctgc  240
gtcctccttg  gaggtggcag  ggccgggccg  ggaacccctg  gagctggaag  ttgctgtgga  300
ggccctggca  cggctgcagc  agggtgtgag  cgccaccgtt  gcccaccttc  tggacctggc  360
aggcagcgcc  ggtgcgactg  ggagctggcg  tagcccctct  gagccacagg  agccgctggt  420
gcaggacctg  caggctgctg  tggccgccgt  ccagagtgcc  gtccacgagc  tgttggagtt  480
tgcccgcagc  gcggtgggca  atgctgccca  cacatctgac  cgtgccctgc  atgccaagct  540
tagccggcag  ctgcagaaga  tggaggacgt  gcaccagacg  ctggtggcac  atggtcaggc  600
cctcgacgct  ggccggggag  gctctggagc  cacccttgag  gacctggacc  ggctggtggc  660
ctgctcgcgg  gctgtgcccg  aggacgccaa  gcagctggcc  tccttcctgc  acggcaatgc  720
ctcactgctc  ttcagacgga  ccaaggccac  tgccccgggg  cctgagggggg  gtggcaccct  780
gcaccccaac  cccactgaca  agaccagcag  catccagtca  cgacccctgc  cctcaccccc  840
taagttcacc  tcccaggact  cgccagatgg  gcagtacgag  aacagcgagg  ggggctggat  900
ggaggactat  gactacgtcc  accttacagg  gggaaggagg  agtttttaga  agacccagaa  960
ggagcttctg  ggaaaaaggg  cagcat                                            986
```


<210> 110
<211> 414
<212> DNA
<213> Homo sapiens

<400> 110

```
cgaagggaaa  gcagcaggtt  ggggcttctt  gtggccaact  tcagagcctg  tcaccaggaa   60
aggtaagcat  gggaggaagg  aagatggcga  cagatgaaga  aaatgtctat  ggtttagaag  120
agaacgctca  gtcccggcag  gagtccacgc  ggaggctcat  ccttgttggg  agaacagggg  180
ccgggaagag  cgccactggg  aacagcatcc  tgggccagag  acggttcttc  tccaggctgg  240
gggccacgtc  tgtgaccagg  gcctgcacca  cgggcagccg  caggtgggac  aagtgccacg  300
tggaagtcgt  ggacactccg  gacattttca  gctcccaagt  gtccaagaca  gatcctggct  360
gtgaggagag  aggtcactgc  tacctgctct  cggcccccgg  accccacgcg  ctgg         414
```


<210> 111
<211> 419
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature

```
<222> (1)...(419)
<223> n = a,t,c or g
```


```
    <400> 111
gactctcggg ttacgttcac taacgaagga gggcggtggt gggggtgatg tggcggcctt        60
tgaggttggc acaggggctg cggccagccg ggcgctgggg cagtgcgggc agctccagaa       120
gctcatcgtc atcttcattg gcagcctgtg cgggctgtgc accaagtgcg ctgtgtccaa       180
cgacctcacc cagcaggaga tacagacccc ggagatacaa cagagaaatg cataatgtcc       240
agtcaattta ttaaagttcc aaagtnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn       300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnatttcaa tatgattaaa gcaggagtga       360
ggacacagcg aaagtgagac aaggaaaaga gaacaaaata aaacaggaga gacagaata        419
```


```
    <210> 112
    <211> 1191
    <212> DNA
    <213> Homo sapiens
```


```
    <400> 112
gtgcaaggtg ctgtcactca cgtgtgccct cgaccctccc gttcacccgc agccttctca        60
gcgcctctcc ctgggccgga ggcctcctca ccagcctacc tgttgctctg gaaaaaaatc       120
ccgtcccccg actccgtccc taccccagt cttcggccgg ctctggcccc tggggagggg        180
gctgcacggt ggaaggaggc tggctatggg cccggctgcc cgctgcatgt acctcctcct       240
ccacccatcg cctcttgcct gggggtaact ttgcctgggg ctcattcttt ggttaagctg       300
aagctgccgt gggtggccaa accgcagatt ctttgcaaat tctgagctgg cagagctcgc       360
agccgggagc cggccgggga agaggagact tgcgcgccgc aagccgcctg cctccaccct       420
gctctccatc tcccgctcta gaagggctgg gaagctcgcg gccggggttc cacctggaag       480
ctgcttgcat ggctgaaccc agcttaggtc cctgacgggg ctgctggtgg aattctcccc       540
cttcgaagct ggggaggttt aggagggga aggcttctgt gaagctctca aaccactaat        600
agagccccct ccccaacagt gacggcgcag atgctccccc ttttcttagt tgacaccacc       660
aggcagcttc ctggccgttg gtaggttcct gcagctggct gagggaacag ggaccggcag       720
gggactttgt taggggaggg ttgggatggg cagtgggccc ctgaaagtta atatattgga       780
acctagctcg agtgtcgttc tttccaattc cgaaagtaga aagagtaaaa ataggggtga       840
ttggggtggg gttagtagaa tgcctctctc agggcgctcc cccctcccc accgtttag         900
agagctaggc ctcagccagt cttgccactc ccatctcagt gcttcctgaa gaggctgttt       960
tgagtgttga tgaaaagcaa tgcaattatg ccaaacagta ttgagcagaa taatttattt      1020
cttttttttc ttttgcttta aatcatgaat cccgccaggt acggtggctc acgcctgtca      1080
tcccagcact ttgggaggcc aaggcgggcg gattacttaa tacttaaggt caggagttcg      1140
agaccagcct ggccgatatg gtgaaacctc gtctctacca aaaaaaaaa a               1191
```


```
    <210> 113
    <211> 1240
    <212> DNA
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(1240)
    <223> n = a,t,c or g
```

```
        <400> 113
agaacacgaa ctagtgtctc taagccacta taatagttgc acatacaaca tgagtgtggt    60
gtggtaggat gcttttcctt ttaggtcttt actgaacttt caagggatta aaaccaatgt   120
atgtcaactt tatagcaaaa gattcagatt ctaatcctga ataccaatgc attttagagg   180
gggaaaaaat gagggatgta aaatatatat agtagggtaa gagtttttgcc tttgaacaat   240
gtgcatattc tattttaatt tggaatgttt tatacttgca tttcatgtta tgtagttttt   300
ggactggact gtgttttttcc acaaaatgaa aaatcaacta ttttgccacc ttattattca   360
acctacctgc ccatagttgt ctatgccagt tactaatcta tttaaattta ataaatcaaa   420
agctgtcctt agggattggc caagagtcgt aagtccttca gcctgaaggt ttttcaattc    480
attcataaac gttgcatggt tttctttcca tccagccttg atagcatagg gcggctcttc    540
gaaagtgacc agcatatacc tgtctcctct gctggcaggg tcccgggcac ggagcttcat    600
gaaggtctct accgcgcctt tggccgtgtc caggtaggtg gtgcccagat ggctgcgctg    660
gttcatagag gcagacgtgt ctatcaggaa cagtaagatg ggcatagtgc tggccgggga    720
caccggggcc cgaggtggtg gagaaagagg agatggtaga ggtggaggcg ccggtggcgg    780
cgaccgccgc tagcggggcg ggggagcacg gcccccggga ggaaaacact gtctgggtct    840
ttcctccggc tgcggggaat tcctccccccg atagttgaga ggaaactccc cagacccagt    900
gctccccgtc gtaccnccgc ctccgcctcc tcctgcctgc ctgcccgctg gggcggggcgc    960
ccagccgtct gtctgtcggt tcgtccccccc cgcctcgggg gtcccgtccc cgctcccggc   1020
ccctgtgtgt gtcccagcgg gagacgggcc tggctcccca ccccaccccc ggtacaggag   1080
tggggacctg ggagctggcg aagaggggag tgggctgagg gaagattggc cctggggctg   1140
ttgggagaag tttcagggac tccctccgca caccggcggt gtcaccactt tctcagcccc   1200
tctcgcggac gcgtgggtcg cgccggggtt ccgcaggca                         1240
```

```
        <210> 114
        <211> 810
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 114
aatagaattc cgtcggcaca cgcacgcgta cctaggatcg tatagagcgg ccgcaataca    60
tgccgtcttc ttaaatcaac tcctctctct caaaaagcct ttctttccgt gtcgcgaata   120
tcatccctcc ggtcctgtcc cgcagcgagt tccccggcgt tgggcttctc tattatgccg   180
gccagcggag tccaattggt ctgacttcac tgtccggaga atcctctcgc tcccaaacct   240
ccctgagaga cgacctttaa ccgtgccagc cggacctgcc tacaaagacc ctcctcttca   300
acctgtcccc tgtgttactc cacaaaacgg acacagaagt tcgtcaacct gcccagatac   360
cacgcctcaa agcggcaaca gagccgaacc cctttctcag gcttcggacg gcccagaccc   420
ggcatctctt ttctcctctt ccccagaccc ttccacctct ggcctccgag agccccagcc   480
tcagttcccc tccaggccct aggaacccta ctctccagca gtacagtctg tagaccccccg   540
aatcagttcc ccactcaacc tcagaactcc tctggcgccg actggcccca ctcgggcaaa   600
ggatggcggt ggataggatg acccgaacca ccagagccag caaacttacc ccagccgcca   660
tggtgattcc gcaaagaaag ggggtggggt tctcggcgct gccgcaaagt aagcccgccc   720
gggagagaag ggaggggggaa agaggagagc cgtggagaaa cagcagccga aaaacgagga   780
cgaaacagaa gacatacgta cgacagttcg                                   810
```

```
        <210> 115
        <211> 320
        <212> DNA
```

<213> Homo sapiens

<400> 115

```
caagagcacg atgctgaagc actggagagt ggggctctgg ggtcagtgct ggatcagagg    60
caagaggagg tgatgatgcg gccctgtcct gagtgacacc aacccctccc cagtactaca   120
cctgcagctg tgtcctgggc ttcattgcct gctccatctt cttgcagatg agcctgaagc   180
caaaggtcat gctgctgaca gtggccctgg tggcctgtct cgtgctcttc aacctctccc   240
agtgctggca gcgggactgc tgcagccaag gcctgggcaa cctcactgag cccagtggca   300
ccaacaggta gggccccgcc                                               320
```


<210> 116
<211> 456
<212> DNA
<213> Homo sapiens

<400> 116

```
ggcaaggcag gcggcgcggc cggcctcttc gccaagcagg tgcagaagaa gtttagcagg    60
gcccaggaga agtagacaag gcggtttggg aagacatgtc agccagaaga aagagcgagg   120
gaagaaagac aagaaggacc tgagatagag tttgggtttt ccttttttc tctctctctt    180
tattaagccc aacctgcctt ctacaacgga gaagttttgg ttttctaaga gctgatggac   240
ttagaagcat ttggatgaac agctctgctt accaactgaa atatccctat tatcttctaa   300
aagtggagca ctgctttgag ccctgggaag gcttaaaggc aaccagctct cccgagttga   360
tttatcagca gaaaactgat ggaatgtaga tgtagctcct gactttaaga gaccacaatg   420
gaagggaggt tatttctat catttgaggt catgtg                              456
```


<210> 117
<211> 2398
<212> DNA
<213> Homo sapiens

<400> 117

```
cccacgcgtc cggtcagcct cagtcttcaa tgagggaccc cgtacagagt aacccaaacg    60
cttgttccta tttcaggatg tgaacactct gcaaggaggt gggcagcctg tggtgactcc   120
gtccgtccag ccctctcttc agccggccca tccagcgtta ccacagatga cctcacaggc   180
acctcagcca tctgttactg ggctccaggc accttctgct gccttaatgc aagtgtcatc   240
tctcgattcc cactcagctg tatctggaaa tgcccaatcc tttcagccct atgcaggtat   300
gcaagcctac gcttatcccc aggcatctgc cgtcacctcc cagctgcagc ccgttcggcc   360
tttgtaccca gcaccgctct ctcagcctcc ccatttccaa ggatcaggtg atatggcttc   420
atttctcatg actgaagccc ggcaacataa cactgaaatt cgaatggcag tcagcaaagt   480
ggctgataaa atggatcatc tcatgactaa ggttgaagag ttacagaaac atagtgctgg   540
caattccatg cttattccta gcatgtcagt tacaatggaa acaagcatga ttatgagcaa   600
catccagcga atcattcagg aaaatgaaag attgaagcaa gagatccttg aaaagagcaa   660
tcggatagaa gaacagaatg acaagattag tgaactaatt gaacgaaatc agaggtatgt   720
tgagcagagt aacctgatga tggagaagag gaacaactca cttcagacag ccacagaaaa   780
```

```
cacacaggca agagtattgc atgctgaaca agagaaggcc aaggtgacag aggagttagc    840
agcggccact gcacaggtct ctcatctgca gctgaaaatg actgctcacc aaaaaaagga    900
aacagagctg cagatgcagc tgacagaaag cctgaaggag acagatcttc tcaggggcca    960
gctcaccaaa gtgcaggcaa agctctcaga gctccaagaa acctctgagc aagcacagtc   1020
caaattcaaa agtgaaaagc agaaccggaa acaactggaa ctcaaggtga catccctgga   1080
ggaggaactg actgaccttc gagttgagaa ggagtccttg gaaaagaacc tctcagaaag   1140
gaaaaagaag tcagctcaag agcgttctca ggccgaggag gagatagatg aaattcgcaa   1200
gtcataccag gaggaattgg acaaacttcg acagctcttg aaaaagactc gagtgtccac   1260
agaccaagca gctgcagagc agctgtcttt agtacaggct gagctacaga cccagtggga   1320
agcaaaatgt gaacatttgt tggcctccgc caaggatgag cacctgcagc agtaccagga   1380
ggtgtgcgca cagagagatg cctaccagca gaagctggta caacttcagg aaaagtctgt   1440
ttgttttgca gtgtttagcc ctccaggccc aaatcacagc tctcaccaag caaaatgaac   1500
agcacatcaa ggaactagag aagaacaagt cccagatgtc tggggttgaa gctgctgcat   1560
ctgacccctc agagaaggtc aagaagatca tgaaccaggt gttccagtcc ttacggagag   1620
agtttgagct ggaggaatct tacaatggca ggaccattct gggaaccatc atgaatacga   1680
tcaagatggt gactcttcag ctgttaaacc aacaggagca agagaaggaa gagagcagca   1740
gtgaagaaga agaagaaaaa gcagaagagc ggccacgaag accttcccag gagcagtcag   1800
cctcagccag ttctgggcag cctcaagcac ccctgaatag ggagaggcca gagtccccca   1860
tggtgccctc agagcaggtg gtcgaggaag ctgtcccgtt gcctcctcag gccctcacca   1920
cttcccagga tggacacaga aggaaagggg actcagaagc tgaggcactc tcagagataa   1980
aagatggttc ccttccaccc gaactgtctt gcatcccatc ccacagagtt ctagggcccc   2040
cgacttcaat tccacctgag cccctaggcc ctgtatccat ggactctgag tgtgaggagt   2100
cacttgctgc cagcccaatg gcagctaaag cccgacaacc catcagggaa aggtctgtgt   2160
tcaggggaag taggcaccag atgggcccac ttacaaggaa aggttccaca agattgttcc   2220
ctggatttca ggaccccgag ggagggggac ccactggcct tagggcttga aaagcccagg   2280
gagagcctca gcctccacag cttcaaggaa aggttgatgt tcactaggtt ccaccggttc   2340
cccacaaggg agcttttcaa gaacaggagg gcaggtttcc acagttttgc agggagca     2398
```

        <210> 118
        <211> 800
        <212> DNA
        <213> Homo sapiens

        <400> 118
```
agcgaaacgg cgcagcaaat tatcgaccgt ctgcgcgtaa aactggcgaa agaaccgggg     60
gcgaatctgt tcctgatggc ggtacaggat attcgcgttg gtgggcgtca gtcgaacgcc    120
agctaccagt acacgttgtt atccgacgac ctggcggcac tgcgagaatg ggagccgaaa    180
atccgcaaaa aactggcgac gttgccggaa ctggcggacg tgaactccga tcagcaggat    240
aacggcgcgg agatgaatct ggtttacgac cgcgacacca tggcacggct gggaatcgac    300
gtacaagccg ccaacagtct gttaaataac gccttcggtc agcggcaaat ctcgaccatt    360
taccagccga tgaaccagta taaagtggtg atggaagtgg atccgcgcta tacccaggac    420
atcagtgcgc tggaaaaaat gttcgttatc aataacgaag gcaaagcgat cccgctgtca    480
tatttcgcta aatggcaacc ggcgaatgcc ccactatcgg tgaatcatca gggattatcg    540
gcggccttga ccatttcgtt taacctgccg accggaaaat cgctctcgga cgccagtgcg    600
gcgatcgatc gcgcaatgag ccagcttggt gtgccttcga cggtgcgcgg cagttttgcc    660
ggcccggcgc aggtgttcca ggagaccatg aactcgcagg tgatcctgat tattgccgcc    720
atcgccacgg tgtatatcgt gctgggaatc ccttacgaga ggtacgtaca tccgccgacg    780
attctcttgt gaaggccgcc                                                800
```

        <210> 119
        <211> 427
        <212> DNA

<213> Homo sapiens

<400> 119
aaatcatcac acctgatgcg atgggttgcc agaaagatat tgcagagaag atacaaaaac   60
agggaggtga ttatttattc gctgtaaaag gaaaccaggg gcggcttaat aaagcctttg   120
aggaaaaatt tccgctgaaa gaattaaata atccagagca tgacagttac gcaatcagtg   180
aaaagagtca cggcagagaa gaaatccgtc ttcatattgt ttgcgatgtc cctgatgaac   240
ttattgattt cacgtttgaa tggaaagggc tgaagaaatt atgcgtggca gtctcctttc   300
ggtccataat agcagaacaa aagaaagagc cagaaatgac ggtcagatac aatatcagtt   360
agttgggtat cgccggggat atatcagtca cagcgatctc cgggacggac gattgaatct   420
cgtaatc   427

<210> 120
<211> 378
<212> DNA
<213> Homo sapiens

<400> 120
ccattatttg aaaatgctca ctcaggcgcg gcgggaagtg attatcgcca acgcctactt   60
cttccccggc tatcgatttt tacacgcctt gcgtaaagcg gcacggcgcg gggtgcggat   120
caaactgatc attcagggcg aaccggatat gccgattgtc agagtcggtg cgcgcttgct   180
gtataactat ctggttaaag gcggcgttca ggtttttgag taccgccgcc gcccgctcca   240
cggcaaagtg gcattgatgg acgatcactg ggcgacagta gggtccagta atctccatcc   300
ggtcagttag tcggggaatc tccaagcaaa tgtcatcctc cacgttctac gggtaccgac   360
attgaatccg taatcatg   378

<210> 121
<211> 508
<212> DNA
<213> Homo sapiens

<400> 121
ctgccgcctg gtgaagttta cgccccatcg aagccctggc aaaagaagtc cgtgaactga   60
aataacatac tcgttaattg ctcaatccag ccacaacgcg agaactgacc agtctgggac   120
gaaacctgaa ccgattgtta aaaagtgaac gcgaacgtta cgacaaatac cgtacgacgc   180
tcaccgacct gacccatagt ctgaaaacgc cactggcggt gctgcaaagt acgctgcgtt   240
ctctgcgtag tgaaaagatg agcgtcagtg atgctgagcc ggtaatgctg gagcaaatca   300
gccgcatttc acagcaaatt ggctactacc tgcatcgtgc cagtatgcgc ggcgggacat   360
tgctcagccg cgagctgcat ccggtcgccc cactgctgga caatctcacc tcagcgctga   420
tcaaaggcaa gccgcgtaaa ggggggcaacg tcactgtttt tccattcaca gcgatgtaca   480
gggacggaca ttgaatccgt gatcagtg   508

53

```
<210> 122
<211> 724
<212> DNA
<213> Homo sapiens
```

```
<400> 122
gggtaacact gtgatgtttc agcacctgat gcagaagcgg aagcacaccc agtggacgta      60
tggaccactg acctcgactc tctatgacct cacagagatc gactcctcag gggatgagca     120
gtccctgctg gaacttatca tcaccaccaa gaagcgggag gctcgccaga tcctggacca     180
gacgccggtg aaggagctgg tgagcctcaa gtggaagcgg tacgggcggc cgtacttctg     240
catgctgggt gccatatatc tgctgtacat catctgcttc accatgtgct gcatctaccg     300
cccccctcaag cccaggacca ataaccgcac gagcccccgg gacaacaccc tcttacagca     360
gaagctactt caggaagcct acatgacccc taaggacgat atccggctgg tcggggagct     420
ggtgactgtc attggggcta tcatcatcct gctggtagag gttccagaca tcttcagaat     480
gggggtcact cgcttctttg gacagaccat ccttgggggc ccattccatg tcctcatcat     540
cacctatgcc ttcatggtgc tggtgaccat ggtgatgcgg ctcatcagtg ccagcgggga     600
ggtggtaccc atgtcctttg cactcgtgct gggctggtgc aacgtcatgt acttcgcccg     660
aggattccag atgctaggcc ccttcaccat catgattcag aagatgattt ttggcgacct     720
gatg                                                                  724
```

```
<210> 123
<211> 435
<212> DNA
<213> Homo sapiens
```

```
<400> 123
gagaaagcag cagctgccaa catagatgaa gtgcagaagt cagatgtatc ctctacaggg      60
cagggtgtca tcgacaagga tgcgctgggg cctatgatgc ttgaggtagc acatcttcat     120
tttagtgctg tattttaaaa tcttgttgat cttcacatta ttacatttaa tttcaggtga     180
atataattta aggagaatcc acactagtac tagtactatg gacctcttga gcttgctgat     240
atgcctgtgt gtctctatgt atgttttggc tcctgctgcc agtatatgtg tgtttgaaat     300
taacatagaa ttaaattaac tagattagag tagacattgg caagttgtaa ttgccagttg     360
agcatttatt tgaaaaactg tattcacaag tcctactaaa ttctgtgttg attttagctt     420
gaaatgttct caaaa                                                      435
```

```
<210> 124
<211> 363
<212> DNA
<213> Homo sapiens
```

```
<400> 124
actggaagtg ccttcagagg tcaccccttt gggctttgcc atgcaggcta caaagactct      60
```

```
cctcctcaga acatgctgct tgcaggaatt caacatcatg gaaaagaata aaggatgggc        120
tctcctggga ggaaaagatg gccatcttca gggactattt ctccttgcca acgcattgct        180
ggaaagaaat cagctccttg cacagaaggt catgtactta ttagtccctc ttcttaaccg        240
agggaatgat aaacataaac tcacatctgc aggctttttt gtggagcttc tccggagtcc        300
agtggccaag agactgccca gcatatactc tgttgcccgc tttaaagact ggctacaaga        360
tgg                                                                     363
```

```
<210> 125
<211> 373
<212> DNA
<213> Homo sapiens
```

```
<400> 125
agaccggccc ccgctccctc agctgcgccg gaggaggcgc ccagtcctcg gggtgaaggg         60
tcggggatg gcgaagcgaa gagtgcccgc tccggtgtgg gggggagcag gaggagggac        120
gaagtccgcc cgccgcgccg ccgccgcgcc tgacaccgag cggagcgagg aaggaggacg        180
agcggtgaag gaagcctacc cttccagccg tcagccgccg ccgccgtcgc cgtgacccct        240
gcgttgcgcc cggcgctgcc acccgaactt agccccctcg atgccaattt caaatagga        300
aggaaaaggg aaaagaaggg aagagaaaat ccggccgctg agtcccgcgt ccactcacac        360
ctccgctcgt gcc                                                          373
```

```
<210> 126
<211> 362
<212> DNA
<213> Homo sapiens
```

```
<400> 126
gcctacaggg ggtccatggc agcagttcta ctttctgcag ctccctaagc agtgactttg         60
accccctaga gtactgcagc cctaaagggg atccccagcg agtggacatg cagcctagtg        120
tgacctctcg gcctcgttcc ttggactcgg aggtgcccac aggggaaacc caggtttcca        180
gccatgtcca ctaccaccgc caccggcacc accactacaa aaagcggttc cagaggcatg        240
gcaggaagcc tggcccagaa accggagtcc cccagtccag gcctcctatt cctcggacac        300
agccccagcc agagccacct tctcctgatc agcaagtcac cagatccaac tcagcagccc        360
ct                                                                      362
```

```
<210> 127
<211> 351
<212> DNA
<213> Homo sapiens
```

```
        <400> 127
catggctgac  cccgaccccc  ggtaccctcg  ctcctcgatc  gaggacgact  tcaactatgg      60
cagcagcgag  gcctccgaca  ccgtgcacat  tcgaatggcc  tttctgagaa  gagtctacag     120
cattctatct  ctgcaggatc  tcttagctac  tgtgacttcg  acagataatt  tagcctttga     180
ggatggacgg  actgactggc  tgcaaaggcc  tgactgtgtc  tccttcaaaa  ttcatgtgct     240
gccaatgtga  cggtattaag  aggaggggcc  ttagaggggg  attagatcct  gaaaggtcct     300
tacttttttgg  agtgacgagg  atgcatacga  tgaaagcatc  tcgtagatac  g              351
```

```
        <210> 128
        <211> 374
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 128
gaactcccca  aaggcaccat  ccaggttttt  accccgcttg  tcaaattccc  ctctggccca      60
gggctggctg  ctcagcagga  gtgtttaata  agcacttaat  tgcccggtga  gtacagacca     120
ttccagctca  ccttaactgt  ttcctggctg  actcgcctct  cggcctgatt  gccctgctca     180
tctggctgag  tgagctggaa  tgagtgtagt  ggtagtgcca  cctataggtt  cctcttacct     240
tggtcttatt  tcacaggagc  acttcccgaa  cgagtttacc  tcgggagatg  gaaagaaagc     300
tcaccaggac  tttggctact  tttatggctc  gagctatgtg  gcagcctctg  acagcagccg     360
gactcctggg  ctgt                                                           374
```

```
        <210> 129
        <211> 392
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 129
taccaccacg  cccagcccca  acatatgact  ttctgtgtgt  tttccaagag  tctagtgtga      60
ggtcagaggt  cagacaggtc  atcaggaatt  ttgcttcaag  tgagttgctg  ctgccctgac     120
tcttttcccc  cagcaattaa  gtccccccgg  ggcttggggg  ttgggtttgt  cagcttgctt     180
ttgctgtgct  gagggcttct  ccagactgaa  tcagcaggtc  ctcagctcat  ctctgctcct     240
tctctctagg  accaactgcc  cctgtaagta  cagttttttg  gataacctca  agaagttgac     300
tcctcgacgc  gatgttccca  cttaccccaa  ggtaagatga  gattccggcc  cagaagaagc     360
tgcagctgtg  tccccagccc  cacgccgagc  cc                                     392
```

```
        <210> 130
        <211> 359
        <212> DNA
        <213> Homo sapiens
```

<400> 130
ccgggacgat gcctgcctct actccccagc ctcagctccc gaggtcatca cagtaggggc   60
caccaatgcc caggaccagc cggtgaccct ggggactttg gggaccaact ttggccgctg   120
tgtggacctc tttgccccag gggaggacat cattggagcc tccagcgact gcagcacctg   180
ctttgtgtca cagagtggga catcacaggc tgctgcccac gtggctggca ttgcagccat   240
gatgctgtct gccgagccgg agctcaccct ggccgagttg aggcagagac tgatccactt   300
ctctgccaaa gatgtcatca atgaggcctg gttccctgag gaccagcggg tactgaccc   359

<210> 131
<211> 389
<212> DNA
<213> Homo sapiens

<400> 131
gttagaaatc aagtttttgg agcaggtgga tcaattctat gatgacaact ttcccatgga   60
aattcggcat ctgttggccc aatggattga aaatcaagac tggtaggatc aaacatattt   120
tccctagaag ttgatgcaca aatgtctgat gctctatcca tgtgaattta ttttatggtc   180
cacttttac tcagtagatg cattcttttc aggtaaagaa ctttctcaag gatttgaaag   240
ccttcccaaa gaaggggaat aattgtcctt tctggttcca ttcattgtaa atgaaaagtt   300
aatggttcca gtgcttcttt tctctgtaaa caaaaaccca ataatttttt catgtattaa   360
aaaaagaagc aaatcaattg attgtcagt   389

<210> 132
<211> 465
<212> DNA
<213> Homo sapiens

<400> 132
ggaggcagga gatgcggatg aagatgaggc tgatgctaat agctctgact gtgaaccaga   60
ggggcccgtg gaagcggaag agcctcctca ggaggatagt agcagtcagt cagactctgt   120
ggaggaccgg agtgaggatg aggaagatga acattcagag gaggaagaaa caagtggaag   180
ttcagcatca gaggaatctg agtctgaaga gtctgaggat gcccaatcac agagccaagc   240
agatgaagag gaggaagatg atgattttgg ggtggagtac ttgcttgcca gggatgaaga   300
gcagagtgag gcagatgcag gcagtgggcc tcctactcca gggcccacta ctctaggtcc   360
aaagaaagaa attactgaca ttgctgcagc agctgaaagt ctccagccca agggttacac   420
gctggccacg acccaggtaa agacgcccat tcccctgctt ctgcg   465

<210> 133
<211> 354
<212> DNA
<213> Homo sapiens

```
        <400> 133
ctaaaaaacc taagggagtt actgcttgaa gacaaccagt taccccaaat accctctggt      60
ttgccagagt ctttgacaga acttagtcta attcaaacca atatatacaa cataactaaa     120
gagggcattt caagacttat aaacttgaaa aatctctatt tggcctggaa ctgctatttt     180
aacaaagttt gcgagaaaac taacatagaa gatggagtat ttgaaacgct gacaaatttg     240
gagttgctat cactatcttt caattctctt tcacacgtgc cacccaaact gccaagctcc     300
ctacgcaaac tttttctgag caacacccag atcaaataca ttagtgaaga agat           354
```

```
        <210> 134
        <211> 326
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(326)
        <223> n = a,t,c or g
```

```
        <400> 134
cccacgcgtc cggngacagg cctggccggc ctctgcagag acgtccaacc tcgtgcgcat      60
gcgcagccag gccctgggcc agtcggcgcc ctcgctcacc gccagcctga aggagctgag     120
tctccccaga agaggaagtt tccctgtgtg tccaaatgct gggagaacat caccccttgg     180
atgaattgcc accacattaa ataaaatata tccaaagctc nnnnnnnnnn nnnngggggg     240
gccgttttaa aggacccttg gggggggccaa ggtttacgcg ggctggcaag gtaatagttt     300
tttccttata gggagccgaa ttaaaa                                          326
```

```
        <210> 135
        <211> 210
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 135
cttctgtgtg tctgtcttcc tgtgggtgcc tgcccgtctc tttctcttct aacagcccct      60
ttgaaccagc tgatgcgctg tcttcggaaa taccaatccc ggactcccag tcccctccta     120
cattctgtcc ccagtgaaat agtgtttgat tttgagcctg gcccagtgtt cagaggtagt     180
tgggctcttc tttcttggtc gacgcggccg                                      210
```

```
        <210> 136
        <211> 310
        <212> DNA
        <213> Homo sapiens
```

```
      <400> 136
ttttccaat acacatataa accatcattc actaaaatgt actatatatt caatatttg      60
tgtatactca ctgctttcc taacgtgaaa aatttaccaa aatgctaatt gtgacttata     120
aggtatttaa cagactcccg acaaaaagca gaatgatcag cgaaatcgga aaagaaaagc    180
tgaaccatat gaaactagcc aaggtagtaa taatttcgta tcaacaaaag tactcaattc    240
taatgtactt agatagaatt ttctaactca tactaaataa ttagtttgta cacagggatt    300
cctgataaag                                                          310
```

```
      <210> 137
      <211> 502
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 137
cttaaagtga aatttaaaaa gtaataataa tttttaaaaa tgtttaaagg cttactttgg      60
agagacagtt ttacatagct taatatttta tcattaaagg catggtggag ctggttcctg     120
cttccgatac cctcaggaaa atccaagtgg aatatggtgt gacaggatcc tttaaagata    180
aaccacttgc agagtggcta aggaaataca atccctctga agaagaatat gaaaaggctt    240
cagagaactt tatctattcc tgtgctggat gctgtgtagc cacctatgtt ttaggcatct    300
gtgatcgaca caatgacaat ataatgcttc gaagcacggg acacatgttt cacattgact    360
ttggaaagtt tttgggacat gcacagatgt ttggcagctt caaaagggat cgggctcctt    420
ttgtgctgac ctctgatatg gcatatgtca ttaatggggg tgaaaagccc accattcgtt    480
ttcagttgtt tgtggacctc tg                                            502
```

```
      <210> 138
      <211> 963
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 138
ctcctagtcc cctccctagc ctgtcccttc ctcctcccgt tgctcctggt ggccaggaga      60
gcccttcacc ccacacagct gaggtggaga gtgaggcctc accacctcct gctcggcccc     120
tcccagggga agccaggctg gcgcccatct ctgaagaggg aaagccgcag cttgttgggc    180
gtttcccaag tgacttcatc caaggaaccg gctgagcctc ttcccttgca gccaacatcc    240
cccactctct ctggttctcc aaaaccttca accccctcagc tcacttcaga gagctcagat    300
acagaggaca gtgctggagg cgggccagag accagggaag ctctggctga gagcgaccgt    360
gcagctgagg gtctgggggc tggagttgag gaggaaggag atgatgggaa ggaaccccaa    420
gttgggggca gcccccaacc cctgagccat cccagcccag tgtggatgaa ctactcctac    480
agcagcctgt gtttgagcag cgaggagtca gaaagcagtg gggaagatga ggagttctgg    540
gctgagctgc agagtcttcg gcagaagcac ttgtcagagg tggaaacact acagacacta    600
cagaaaaaag aaattgaaga tttgtacagc cggctgggga agcagccccc accgggtatt    660
gtggccccag ctgctatgct gtccagccgc cagcgccgcc tctccaaggg cagcttcccc    720
acctcccgcc gcaacagcct acagcgctct gagcccccag gccctggtga gactgcagtc    780
```

```
acccagcttc catctttccc ctgagacccc tttctgtcga ctgtttttct ccaggccctg    840
ggggtctgcc ccggggggaat agaccccctc tccccacctc ccctttcctc acttagtgct    900
ctccttcccc catcctggct ccaggcatca tgcgaaggaa ctctctgagt ggcagcagca    960
ccg                                                                  963
```

```
   <210> 139
   <211> 376
   <212> DNA
   <213> Homo sapiens

   <220>
   <221> misc_feature
   <222> (1)...(376)
   <223> n = a,t,c or g
```

```
   <400> 139
cgccgctttg tttctcaaga gactgggaat ctgtatattg ccaaagtaga aaaatcagat     60
gttgggaatt atacctgtgt ggttaccaat accgtgacaa accacaaggt cctggggcca    120
cctacaccac taatattgag aaatgatgga gtgatgggtg aatatgagcc caaaatagaa    180
gtgcagttcc cagaaacagt tccgactgca aaaggagcaa cggtgaagct ggaatgcttt    240
gctttaggaa atccagtacc aactattatc tggcgaagag ctgatggaaa gccaatagca    300
aggaaagcca gaagacacaa gtcaagagtg gggaaanntc ttgagaaatc ccttaatttt    360
tcagcaggga ggatgc                                                   376
```

```
   <210> 140
   <211> 968
   <212> DNA
   <213> Homo sapiens

   <220>
   <221> misc_feature
   <222> (1)...(968)
   <223> n = a,t,c or g
```

```
   <400> 140
gcaagggggca gttggtgaac ttgctgcctc cagagaattt tccctggtgt ggaggcagcc     60
agggacccag gatgctccgg acctgttacg tgctctgttc ccaagctggt ccccgctcca    120
ggggctggca gtccctgagc tttgatggcg gggccttcca ccttaagggc acaggagagc    180
tgacacgggc cttgctggtt ctccggctgt gtgcctggcc cccactcgtc actcacgggc    240
tgttgctcca ggcctggtct cggcgactcc tgggctcccg gctctcaggc gcatttctcc    300
gagcatccgt ctatgggcag tttgtggctg gtgagacagc agaggaggtg aagggctgcg    360
tgcagcagct gcggaccctc agcctccgac cactgctggc agtgcccact gaggaggagc    420
cggactctgc tgccaagagt ggtgaggcgt ggtatgaggg gaacctcggt gctatgctgc    480
ggtgtgtgga cctgtcacgg ggcctcctgg agcccccag cctggctgag gccagcctca    540
tgcagctgaa ggtgacggcg ctgaccagta ctcggctct taaggagcta gcctcgtggg    600
tcagaaggcc aggagcctcc ttggagctga gccccgagag gctggctgaa gctatggact    660
ctgggcagaa cctccaggtc tcctgcctca atgctgagca gaaccagcac ctccgggcct    720
ccctcagccg cctgcatcgg gtggcacagt atgcccgggc ccagcacgtg cggctcctgg    780
```

```
tggatgcgga gtacacctca ctgaaccctg cgctctcgct gctggtggct gccctggctg    840
tgcgctggaa cagcccgggt gaaggcgggc cctgggtgtg gaacacctac caggcctgtc    900
taaaggacac attctagcgg ctggggaggg atgcanaggc tgcgcacagg ccggcctgg     960
ccttcggg                                                             968
```


```
        <210> 141
        <211> 306
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 141
agacggctga aaagggaggg gtattgaggg cggttcagag ggcgaggaga ggggcgtaga     60
gaacctgtgg agaagaagtt cactggaggg gcattaggcc tcgcactatg tatccagatc    120
atcagtaggg gaagagaaaa gatgggcaat atgtatagtc agacgagaag tgggatcaaa    180
cagagggctc atggagaagt aggctaccca ccacataacc ccatcatagg attgcaggag    240
atacagctat agataagaat atccaccagt cggtgagtga gcagatcaag aagaactttg    300
ccaaga                                                               306
```


```
        <210> 142
        <211> 316
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 142
ccacactcac atttaatata ctgttaggtt gtttactttg aggcaatgtc atcctcatta     60
gtatagggca ttatattcct gaatagcaga atactcctcc attcatgaag ttcagtatta    120
tacattctta ttattgcaca acaaatagaa gactttggat ttccttatat aagtaccttg    180
acagatgact aacccatttt tcctatgctt tacaactatg atcagtaact gtaatttttt    240
taaaggtcct cctggacccc cgggtgaaaa aggagatcga ggtcccactg gagaaagtgg    300
tccacgagga tttcca                                                    316
```


```
        <210> 143
        <211> 339
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 143
gacaatacca aatgaatgaa cgtgactgtg ttccaacaaa actttatta caaaaacagg      60
gatgggccgg atgtagccag aggccataat ttgccaaccc ctgatttaga cgaaggaaag    120
gagcagtgct tcactgcttt taaattaatt ctgtattctc acaaggccta cattgaaatg    180
```

61

```
gaattatagc ctcatttttt cttagaacct ttatattttg ttttattcat atacagggtt    240
gtcaagctgg acagactatt aaagttcaag tctcctttga tttgcttagt ctgatgttta    300
catttgtaag tccatgtacc aacgatttaa tcatacacg                           339
```

<210> 144
<211> 2018
<212> DNA
<213> Homo sapiens

<400> 144
```
acaagttatc tgtgaatcat aggagaacac atcttacaaa actcatgcac actgttgaac     60
aagctacttt aaggatatcc cagagcttcc aaaagaccac agagtttgat acaaattcaa    120
cggatatagc tctcaaagtt ttctttttg attcatataa catgaaacat attcatcctc     180
atatgaatat ggatggagac tacataaata tatttccaaa gagaaaagct gcatatgatt    240
caaatggcaa tgttgcagtt gcattttat attataagag tattggtcct ttgctttcat     300
catctgacaa cttcttattg aaacctcaaa attatgataa ttctgaagag gaggaaagag    360
tcatatcttc agtaatttca gtctcaatga gctcaaaccc acccacatta tatgaacttg    420
aaaaaataac atttacatta agtcatcgaa aggtcacaga taggtatagg agtctatgtg    480
cattttggaa ttactcacct gataccatga atggcagctg gtcttcagag ggctgtgagc    540
tgacatactc aaatgagacc cacacctcat gccgctgtaa tcacctgaca cattttgcaa    600
ttttgatgtc ctctggtcct tccattggta ttaaagatta taatattctt acaaggatca    660
ctcaactagg aataattatt tcactgattt gtcttgccat atgcattttt accttctggt    720
tcttcagtga aattcaaagc accaggacaa caattcacaa aaatctttgc tgtagcctat    780
ttcttgctga acttgttttt cttgttggga tcaatacaaa tactaataag ctcttctgtt    840
caatcattgc cggactgcta cactacttct ttttagctgc ttttgcatgg atgtgcattg    900
aaggcataca tctctatctc attgttgtgg gtgtcatcta caacaaggga tttttgcaca    960
agaatttta tatctttggc tatctaagcc cagccgtggt agttggattt cggcagcac    1020
taggatacag atattatggc acaaccaaag tatgttggct tagcaccgaa aacaacttta    1080
tttggagttt tataggacca gcatgcctaa tcattcttgt taatctcttg cttttggag    1140
tcatcatata caaagttttt cgtcacactg cagggttgaa accagaagtt agttgctttg    1200
agaacataag gtcttgtgca agaggagccc tcgctcttct gttccttctc ggcaccacct    1260
ggatctttgg ggttctccat gttgtgcacg catcagtggt tacagcttac ctcttcacag    1320
tcagcaatgc tttccagggg atgttcattt ttttattcct gtgtgtttta tctagaaaga    1380
ttcaagaaga atattacaga ttgttcaaaa atgtccctg ttgttttgga tgtttaaggt    1440
aaacatagag aatggtggat aattacaact gcacaaaaat aaaaattcca agctgtggat    1500
gaccaatgta aaaaatgac tcatcaaatt atccaattat taactactag acaaaaagta    1560
ttttaaatca gttttctgt ttatgctata ggaactgtag ataataaggt aaaattatgt    1620
atcatataga tatactatgt ttttctatgt gaaataggtc ctgtccaaaa atagtattgg    1680
ccagatattt gggaaaagta aattgggttt cctcagggag tgatatcccc ttgcacccaa    1740
gggaaaagat tttctttcta acacgagaag tatatgaatg tcctgaaggg aaaccctggg    1800
ccttgatatt tctgtgactc gtgttgcctt tgaaactagt cccctaccac ctcggtaatg    1860
agctccatta cagaaagtgg aacataagag aatgaagggg cagaatatca aacagtgaaa    1920
agggaatgat aagatgtatt ttgaatgaac tgttttttct gtagactagc tgagaaattg    1980
ttgacataaa ataaagaatt gaagaaacaa aaaaaaaa                           2018
```

<210> 145
<211> 429
<212> DNA
<213> Homo sapiens

<400> 145

```
ggcacgaggg aagctgcccc gtccaggttc atgttcctct tatttctcct cacgtgtgag        60
ctggctgcag aagttgctgc agaagttgag aaatcctcag atggtcctgg tgctgcccag       120
gaacccacgt ggctcacaga tgtcccagct gccatggaat tcattgctgc cactgaggtg       180
gctgtcatag gcttcttcca ggatttagaa ataccagcag tgcccatact ccatagcatg       240
gtgcaaaaat tcccaggcgt gtcatttggg atcagcactg attctgaggt tctgacacac       300
tacaacatca ctgggaacac catctgcctc tttcgcctgg tagacaatga acaactgaat       360
ttagaggacg aagacattga aagcattgat gccaccaaat tgagccgttt cattgagatc       420
aacagcctc                                                               429
```

<210> 146
<211> 717
<212> DNA
<213> Homo sapiens

<400> 146

```
gatgaaactt ccggtctcat tgtccgggaa gtgagcattg agatttcgcg ccagcaagtg        60
gaagaactct ttggacctga agattactgg tgccagtgtg tggcctggag ctcagcgggt       120
accacaaaga gccggaaggc gtatgtgcgc attgcatagg aactcatgac ctgacatcca       180
ttagcagagt catcagagtc atctggctgc tgtgttgaga atggaccatg ctgggcaagg       240
ggagaagcag gaagaccagt gatgagactg cagctatgag agatgttaag ctactgtaga       300
ttggaagcag tggaggtggt gaggccagga tttcagatat atttaaaagt agagataaca       360
gcttttgttg agaccttgga tgtgtgatgt gagagaaaga agagaaagga tgattttgaa       420
agggcctaag cctttatcca aggatttctt tcaaatgtct ttagtgaagc cattcctgcc       480
tcacagaggg aggaggctgg gcattccttt ctcaatactt tcagagcagt ttgtccatac       540
ccctaatata gtgcttgtct catttcgaat tatattcact cgtaaaattt gtgtttcatg       600
ccagtgagtt ccatgagatc aagaattcta ttgtacttaa ttttatatct ctcctgctta       660
gcacaatacc tagagtatca cagatgttta acaattttct tgaattaaaa ctgttat        717
```

<210> 147
<211> 367
<212> DNA
<213> Homo sapiens

<400> 147

```
ggcacgagat cgattcatgt aaagctggac gtgggcaagc tgcacaccca gcctaagtta        60
gcggcccagc tcaggatggt ggacgacggc tctgggaagg tggagggcct acctgggatt       120
tgaccagagt ccgcctggct ccaggctctg ccacccacag gaagaagaaa ctacactgac       180
agatgtgaga cagtgtttcc ccttcagtct ttgaacaggc tttgtgtttt ctaaatgaca       240
ctggataaaa gggaattcat tcaagagctc caaggcttcc ctttccgccc ggcttctgtt       300
gccctggcct gagcagcgag cagctgggag gggactgaac tgcccctaac cagggttgtg       360
gctggcg                                                                 367
```

<210> 148
<211> 791
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(791)
<223> n = a,t,c or g

<400> 148

```
cgagacccga ccctgggcgt ggtgcatcga ggtagatgca aagatgctgg ccagagcaag      60
tgtcgcctgg agcgggctca agccctggag caagccaaga agcctcagga agctgtgttt     120
gtcccagagt gtggcgagga tggctccttt acccaggtgc agtgccatac ttacactggg     180
tactgctggt gtgtcacccc ggatgggaag cccatcagtg gctcttctgt gcagaataaa     240
actcctgtat gttcaggttc agtcaccgac aagcccttga gccagggtaa ctcaggaagg     300
aaagatgacg ggtctaagcc gacacccacg atggagaccc agccggtgtt cgatggagat     360
gaaatcacag ccccaactct atggattaaa cacttggtga tcaaggactc caaactgaac     420
aacaccaaca taagaaattc agagaaagtc tattcgtgtg accaggagag gcagagtgcc     480
ctggaagagg cccagcagaa tccccgtgag ggtattgtca tccctgaatg tgcccctggg     540
ggactctata agccagtgca atgccaccag tccactggct actgctggtg tgtgctggtg     600
gacacagggc gcccgctgcc tgggacctcc acacgctacg tgatgcccag ttgtgagagc     660
gacgccaggg ccaagactac agaggcggat gaccccttca aggacaggga gctaccaggc     720
tgtccagaag ggaagaaaat ggagtttatc accagcctac tggatgctct caccactgac     780
atggntcagg g                                                        791
```

<210> 149
<211> 335
<212> DNA
<213> Homo sapiens

<400> 149

```
ggcacgagca aactcggggc tcagcttggg gacgggagtt gatagtcagg tgcctggaac      60
ataatggaga ccgtccatat tggttgaatg agtggatgaa tgaattaatg aatttctttt     120
ctcttaagtc ctgcagctga ttaagtcaca gaaatttctg aataagttgg tgatcttggt     180
ggaaacggag aaggagaaga tcctgcggaa ggaatatgtt tttgctgact ccaaagtaag     240
tgacagcaaa cttctaaagt gggctgtgag gtagggaggg gacacaagcg ttttgaggct     300
cgctgtgtgc cagggagtgt atcattagct cactc                               335
```

<210> 150
<211> 1293
<212> DNA
<213> Homo sapiens

```
        <400> 150
cgacgcctgt ccctcttaga cttgcagctc ggtcctcttg gcagagaccc cccgcaggag       60
tgcagcacct tctccccaac agacagcggg gaggagccgg ggcagctctc ccctggcgtg      120
cagttccagc ggcggcagaa ccagcgccgc ttctccatgg aggacgtcag caagaggctc      180
tctctgccca tggatatccg cctgccccag gaattcctac agaagctaca gatggagagc      240
ccagatctgc ccaagccgct cagccgcatg tcccgccggg cctccctgtc agacattggc      300
tttgggaaac tggaaacata cgtgaaactg gacaaactgg gagagggcac ctatgccaca      360
gtcttcaaag ggcgcagcaa actgacggag aaccttgtgg ccctgaaaga gatccggctg      420
gagcacgagg agggagcgcc ctgcactgcc atccgagagg tgtctctgct gaagaacctg      480
aagcacgcca atattgtgac cctgcatgac ctcatccaca cagatcggtc cctcaccctg      540
gtgtttgagt acctggacag tgacctgaag cagtatctgg accactgtgg gaacctcatg      600
agcatgcaca cgtcaaggt gaggcctcgg gggcagggtc cccccatctt ggcagccacc      660
tgtccagaag cccagtgtgg ggacccactc tcaccaccag ggatccggct gctgaggtgg      720
ctcaaacctt cccacgtagg aaagagggag agggcaatgc catcaacgag tccaggaact      780
gggttgagcg ctttacccca agaacagaca cacactgtct gccactgtct agctgttggt      840
ataaaaccca ctctcaactc tgaacatcag tttcccagtc tgtcaaatgg gagtgtgagc      900
tacctgccaa aatgcaggga ggcttctggg gaagctcggg gttatgaatg acctctcctg      960
gtgtttgtta aagaatcaag actgggcatg gtggcccacg cctgtaatcc cagcactggg     1020
aggccaaggc aggaagatgg cttgagccca ggagtttgag accagcctgg gcaacatggc     1080
aagacctcat ctctactaaa aattgaaaaa ttagccgggc acagtagcgt gcacccatag     1140
tcccagctgc ttgagaggct gaggcaggag ggccacttga gcccgggagg ttgaggctgc     1200
agtgagccat gatcacacca ctgcactcca gcatgggtga cagagtaaaa ccctgacatg     1260
tattgcgggc gctctagagg ataacaagca tac                                  1293
```

```
        <210> 151
        <211> 349
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 151
ggcacgagcg gcacgagcct tctcctactg cattagcatt tggggaccac cctattgtac       60
aaccaaagca attatccttt aaaattattc aggtaaatga taattaaaat gttttttttct     120
atggcttcta agaaaccatt gactaactta ctaacaacta agatgtctgt ttgttttata      180
tgtagtcata aagcagaatt acacatcaag aaagataact tactaaacaa aaacaacaga      240
atttgtagga aggagtgaga aactgaaaca cacaatttac tatcagcttt ttaaacaacc      300
gttaacatgt cagttctgtt tactgattct ttctgaactt aatttccag                  349
```

```
        <210> 152
        <211> 324
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 152
ggcacgagga ccttccttgc tttcagaatt tcacccaggg tctgacaggc ctcaagaaag       60
gagaactagt tatgaaccga ttcatccagg cccatcccca gtggatcatg attcactgga      120
atcgaagcga ccacgtctgg aacaggcttc tgattctcat tatcagggtc acatcactgg      180
cgaatcccta ccaggacgtg tacactagca gctcctcact gtggaatctg atgggcaatg      240
```

```
ccatggtgat  tacccactat  atccgtctta  ccccatatgt  tcaaagtaaa  ctcggttccc     300
tagggaacct  gatgccatgt  tacc                                               324
```

```
        <210> 153
        <211> 377
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 153
ggcacgagaa  aagaagaatt  cagtgcagaa  gaaaattttc  tcattttgac  ggaaatggca      60
accaatcatg  tacaggttct  tgtagaattc  acaaaaaagc  taccaggtat  tttttaaata     120
atcacagtta  atatttattg  agagtttaaa  tatgtgccca  cagattagat  tacctatttt     180
acatacggtg  ttttaatttt  caaaacattc  ctgtgagatc  agctctattt  tcactattac     240
tttgccaagt  attttcacat  gtacttattt  cactgctatt  ctctacaata  gtcttgtgac     300
attgagaaag  gcaggtctgt  tctttgtaaa  atgaaaatca  tttaatatct  gatttaaagt     360
aactgtcgaa  ctactat                                                       377
```

```
        <210> 154
        <211> 1224
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 154
ggtttttttt  tttttctttt  tgggaaaggc  attggccact  ttggacttta  ttagcaacag      60
taatgtcccc  tgacatacgc  acaagcttgt  agctccacgg  ccaggtcttc  ccccaacctc     120
acaatggccc  cgtgatgcag  gcaggcaggc  gagtggggt  ctcccctcct  tatccacagg      180
gccaccgaaa  ggcccacgag  acggccttgc  ccgaggtcac  ccagcggagt  ggcttgctgg     240
gagccctggg  aataacagtc  ccacacaagg  ctctctccct  ccgcagctgg  acctgtacgc     300
gggggctctg  tttgtgcaca  tctgcctggg  ctggaacttc  tacctctcca  ccatcctcac     360
gctcggcatc  acagccctgt  acaccatcgc  aggtatggtg  cctgcagcag  ggaggtccac     420
ccaggggacg  tgtaaagggg  tcagaaggcc  acctcccccT  acaggcccga  gggagcagcc     480
caggaagtgg  ccccagcagg  agccccagaa  gttcctcccc  gtgtccctcc  tccctggggc     540
cagggcccc  tccagcaacc  ttgcttccac  tggcagggg  cctggctgct  gtaatctaca      600
cggacgccct  gcagacgctc  atcatggtgg  tggggctgt  catcctgaca  atcaaaggtg      660
aggacagagt  ctgtggccat  ggcggggctg  tccccacagc  gagcccttTg  gagtctggca     720
ctgcccggca  ctgtgcagga  ttcatgccgt  tggggttctg  ggtagcatcg  ctgggagtgg     780
gtgggttcag  gaggttgagc  cactaggcag  tcagccccc  tgctggcccc  tcagggactg      840
ccctggctgg  tagaggctac  ccaccctgct  gccccgctgt  taccagctct  ggccctggca     900
aggagctgac  tcaggaactc  agggccagcc  acacccgcat  tggctcagcg  cttgatggtg     960
aggtggggct  gtaggcgggt  gtgaaggcac  acaaccagga  ggccataaaa  ctgcctgggc    1020
agctcctcca  attgtttaaa  agcatgtaca  aaatgccaag  aggtgatgct  acctcctgca    1080
ggacaaaggc  cagggaggaa  agaagagagc  tgggagagat  tggcgatact  agtctggaac    1140
agataggaaa  ctcacagggc  tgcccggaga  gagcgtgagc  tcaccgtccc  tggaagtatg    1200
taagcagagc  caggagctcg  tgcc                                             1224
```

66

```
<210> 155
<211> 345
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(345)
<223> n = a,t,c or g
```

```
<400> 155
ggcacgagcg gcacgagatc tgaagaggta tattgcttac agaaagagcg ggagatggta      60
aatcacagtc ttcaagagac ttctgagcaa aacgttattc tacagcatac tcttcagcaa     120
cagcagcaaa tgttacaaca agagacaatt agaaatggag agctagaaga tactcaaact     180
aaacttgaaa aacaggtgtc aaaactggaa caagaacttc aaaaacaaag ggaaagttca     240
gctgaaaagt tgagaaaaat ggaggagaaa tgtgaatcag ctgcacatga agcagatttg     300
aaaaggcaaa aagtgattga gcttactggc actgccaggc aagtn                     345
```

```
<210> 156
<211> 340
<212> DNA
<213> Homo sapiens
```

```
<400> 156
ggcacgagct tctacttgta caggaaaggt tacttgagtt tgtccaaagt ggtgccgttt      60
tctcactatg ctgggacatt gctgctactt ctggcacgtg tggcctgcct cctaggcatt     120
gtccgctggg cctaccccca cttcccgcag tttctcgcca tctcctctcc gatccatctc     180
tacctgacgt cataactcta tatgcatgtt atgcggtcca tcttagtctt ctaaaaaggc     240
cattttagct tacctgccat caagctatac atgtggaaat atacactgta ttattttccc     300
tttccaggtg attacttacc tcatctgttc ttatatctgc                           340
```

```
<210> 157
<211> 478
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(478)
<223> n = a,t,c or g
```

```
<400> 157
gagactccaa gccccagttt cacctcagag gcagagatga ggggtccccc ggtcctgctc      60
```

```
ctccaggccg  ccccaatgga  gtgtcctgtt  ccgcagggga  tcccggccgg  gtccagtcct     120
gagcctgcac  ctgacccccc  ggggcctcat  ttcctccggc  aggagcgcag  cttcgagtgc     180
cgcatgtgcg  gcaaggcctt  caagcgctcg  tccacgctgt  ccacccacct  gctcatccac     240
tcagacacgc  ggccctaccc  ctgccagttc  tgcggcaagc  gtttccacca  gaagtccgac     300
atgaagaagc  acacctacat  ccacacaggt  gagaagccgc  acaagtgcca  ggtgtgcgga     360
aaggccttca  gccagagctc  caacctcatc  acccacagac  tcagagagaa  cccaccatgg     420
tgctgtctcc  tgccgacaag  accaacgtca  aggccgcctg  gngtaagggt  cgcgcgca       478
```

```
        <210> 158
        <211> 332
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 158
ggcacgagca  gctcaccaac  aacacagcca  ctgcccctc   tgccacgccc  gtgtttgggc      60
aagtggcagc  cagcaccgca  ccaagtctgt  ttgggcagca  gactggtatc  acagccagca     120
cagcagttgc  cactccacag  gtaatcagct  caaggttcat  taatctagat  ttttagtata     180
tagtattatt  gaatatatat  aatgttttat  atattagact  ttatacttga  gacataggaa     240
ataatttatg  tataactgtt  aattaaattt  tatatttgct  agattagaaa  attctattaa     300
tttattaatg  aattatatct  aattatgtga  ca                                     332
```

```
        <210> 159
        <211> 868
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 159
cccacgcgtc  cggaataaag  agagaactct  gttactattg  tttttacatc  accaaataat      60
tatttaatat  cgttagctaa  gagaagaatt  ggctatgaac  tgtactttaa  caactgacac     120
aactgcatac  aagttataaa  gtttaataat  ctttatcatc  ttggaaaata  aatctcttct     180
tgctaagtat  cagttttaa   aaaattgcccc atgtattaga  tatgtatttt  tttaacaaaa     240
atgttctgtg  tattaattat  tttgaaataa  attttaagtt  cacaaaaagc  cattacaaga     300
agtggaaata  gcagcaatta  cacatggtgc  tcttcaggga  ttagcctact  tacattctca     360
tactatgatt  catagagata  tcaaagcagg  aaatatcctt  ctgacagaac  caggccaggt     420
gaaacttgct  gactttggct  ctgcttccat  ggcatcacct  gccaattcct  ttgtgggaac     480
gccgtattgg  atggccccag  aagtaatttt  agccatggat  gaaggacaat  atgatggcaa     540
agtagatgtg  tggtctcttg  gaataacatg  tattgaacta  gcggaaagga  agcctccttt     600
atttaatatg  aatgcaatga  gtgccttata  tcacatagcc  caaaatgaat  cccctacact     660
acagtctaat  gaatggtgag  tattgttaat  atatatattg  ctcagtgttg  aataaatgaa     720
atgctttttc  ataatctgtt  atcaaagtga  tttaatttca  gttaggtaaa  atgtatcacc     780
ttataagata  ttaaaataga  tgtattttac  ccttttaaat  atatttattc  tttatcatgt     840
ttccatttca  tggcatacgt  ataactgg                                           868
```

```
        <210> 160
```

68

<211> 1404
<212> DNA
<213> Homo sapiens

<400> 160
```
gcgccacgcg cggcctggcg gcggcggcca ctctaaccag cgcaaaatgt ccctggaaca    60
ggaggaggaa acgcaacctg ggcggctcct aggacgcaga gacgccgtcc ccgccttcat   120
tgagcccaac gtgcgcttct ggatcaccga gcgccaatcc tttattcgac gatttcttca   180
atggacagaa ttattagatc ctacaaatgt gttcatttca gttgaaagta tagaaaactc   240
gaggcaacta ttgtgcacaa atgaagatgt ttccagccct gcctcggcgg accaaaggat   300
acaggaagct tggaagcgga gtcttgcaac agtgcatccc gacagcagca acctgatccc   360
caagcttttt cgacctgcag cgttcctgcc tttcatggcg cccacggtat ttttgtcaat   420
gacgccactg aaagggatca agtccgtgat tttacctcag gttttcctct gtgcctacat   480
ggcagcgttc aacagcatca atggaaacag aagttacact tgtaagccac tagaaagatc   540
attactaatg gcgggagccg ttgcttcttc aactttctta ggagtaatcc ctcagtttgt   600
ccagatgaag tatggcctga ctggcccttg gattaaaaga ctcttacctg tgatcttcct   660
cgtgcaagcc agtggaatga atgtctacat gtcccgaagt cttgaatcca ttaaggggat   720
tgcggtcatg gacaaggaag gcaatgtcct gggtcattcc agaattgctg ggacaaaggc   780
tgttagagaa acgctagcat ccagaatagt gctgtttggg acctcagctc tgattcctga   840
agtcttcacc tactttttta aaaggaccca gtatttcagg aaaaacccag ggtcattgtg   900
gattttgaaa ctgtcttgta ctgtcctggc aatgggactg atggtgccat tttcttttag   960
tatatttcca cagattggac agatacagta ctgtagtctt gaagagaaaa ttcagtctcc  1020
aacagaagaa acagaaatct tttatcacag aggggtgtag gccgtgagtt ttaggtgaat  1080
ttatgtggtt ccctgcttga aaaccttccc cctctcccag gttcggttta gagaactttg  1140
cccacaggtc ttctggggac cccagaggtg tctgtgctga caaggcgact tcagattcca  1200
tactgagatc gttcccaggc tggcgtctct ggggttttta aggctggctg gagaagacag  1260
tgggaagggt gccccgtctg acacccctgg ggttgctgag gaacggttg gagtggggat  1320
cggcctgcga aaggatactg tgaaatcact aattaactaa taaacctgtc tcaagttgag  1380
gatttgaaga aaaaaaaaaa aaag                                         1404
```


<210> 161
<211> 562
<212> DNA
<213> Homo sapiens

<400> 161
```
cccacgcgtc cgggagattg gaagtcttct ataacgggac ctggggcagc gtcggcagga    60
ggaacatcac cacagccata gcaggcattg tgtgcaggca gctgggctgt ggggagaatg   120
gagttgtcag cctcgcccct ttatctaaga caggctctgg tttcatgtgg gtggatgaca   180
ttcagtgtcc taaaacgcat atctccatat ggcagtgcct gtctgcccca tgggagcgaa   240
gaatctccag cccagcagaa gagacctgga tcacatgtga agatagaata agagtgcgtg   300
gaggagacac cgagtgctct gggagagtgg agatctggca cgcaggctcc tggggcacag   360
tgtgtgatga ctcctgggac ctggccgagg cggaagtggt gtgtcagcag ctgggctgtg   420
gctctgctct ggctgccctg agggacgctt cgtttggcca gggaactgga accatctggt   480
tggatgacat gcggtgcaaa ggaaatgagt catttctatg ggactgtcac gccaaaccct   540
ggggacagag tgactgtgga ca                                            562
```


<210> 162

<211> 1812
<212> DNA
<213> Homo sapiens

<400> 162
```
gccttgcttg gaggcaaagc gtcctccact ctgtcctcag gactcagctg tgtggccttg      60
gatttctttt tgcgggactt cgcgcccttg ggtgccaacg gtccaggatc cccctggaac     120
cagatggtac ggccatgccg gtcctgcagg gagctcatgc ctggcatgcc atagcagcgc     180
agccaggctc gaaaggcagc aaagtcctcc tccccgctct ctgacccgta gcccctgccc     240
cccaactgga ccacttcctt gggcactgag tgacatagct ccagcaggtc tggattctgc     300
agcttggtcc ttatcttctg gctcagggtc agctccgggc tcggcctgtg ctgctgcagg     360
gcctccagga ccgagcgggc cttctcaaag ggggggatct tcagccggta caggatctct     420
gcccgcagat agttgccaat gccattgaag aacctctggt ccaggagggc ctcgcagatg     480
ggccggtcaa aggccttatc cgctaggttt cgtagcacat tctccctgaa ctgctggtac     540
tcctgcaaga cacagggccc gcggcccggc tgccactttc ccccaaggtc ccagcggccg     600
aaccggcgga tgtccacgaa acatagggcg agccgggggc caggcggggc cgtgtaaaag     660
cgcaggtggg catggcgtgg cagctcctcg cggggcacca gctgaaaaga gccggacatg     720
ccgaagcgga agaccagggc cagtggctcc tgttggggct gggccccagg cagagggctc     780
agtatcaggc gcagctcctt gccgcgggct gaagctgaga tgcggtaggc actgctctca     840
aagggcacct cagggttgcg gctgacagag gacttctcca cgcagccgcc gaacaccagc     900
gccctgcagg cctcattcac aaactggctg gccaggtgca gctcggggcc ctcaggcatc     960
ctgagggagg gtggcagagt cctggctggg aggtggcgga agaacctgac ttcccactgc    1020
ctggcgccgg cgagatgcgg gggcaggtct gaggccccgg gtcgccgctg tctctgcggt    1080
tggggggaagt cacccagcta gcgtgggaca gggtcggcac ccccagcagg aaacagcagc    1140
gacgagccag agcggagtcg cctgcagctg cgcgcaggac gtgcacaggt gcgcggtacg    1200
cacaggccct agggacccgg tggggatctt aagcaccaac gaacagtcag acctaactca    1260
taaacaaaca tcatcacggc ctgccctgtc agaagcgcag ccaagcaaca acaacaacaa    1320
aaaaaggcga ggaggtagac ccacttgaga tggttctgtt gcggagagtc tctgaaatca    1380
gaaagcgcca gtccgcaaaa acgaggaaac ccgacgtgtc cggcggaagg aaccgccagt    1440
acaaaggccc tgaggcgaga aagagattgg tcactgaaag aactcaaaga agtcctgtgt    1500
ggctggagta tagctgcggg ttagtgctgg caggtgaaga cagagaagca aacccaggtc    1560
aggtccggtt gggcctcggg agggcctccg tgtggagtct gcacttcatt ctaagtgtat    1620
acctaaccca tcgccacgat ttcccctcct tcacactacc ctgctacgtc tccttattag    1680
gcgtaataaa attatgtggc tttgtaagaa attggttttt agagatgcat gttaaagtat    1740
tgggtatgaa atgtcatgat ttgtctaatt tactttaaaa tacttctgcc ataataaatg    1800
aatagaatta ac                                                         1812
```


<210> 163
<211> 333
<212> DNA
<213> Homo sapiens

<400> 163
```
agctgacgtg gtctgcctgt tattggagag atatattaag aatccagttg tggattgcag      60
ctgatattct tttgcgaatg cttgaaaaag cacttcttta tagtgaacac cagaacatca     120
gcaacactgg actgtcatcc caaggcttat tgatatttgc ggagttgatt cctgccatta     180
agaggacgtt ggctcgcctt ctcgtgatca ttgcgagcct ggactatggc attgagaaac     240
ctcatttagg aacaggcatg caccgtgtga tcggactgat gcttctatac ttaatctttg     300
caaatgctga aagcgtgatt agagtcattg ggg                                   333
```

```
      <210> 164
      <211> 134
      <212> DNA
      <213> Homo sapiens




      <400> 164
tttttttttt gagatggagt ctcgctctgc tgcccaggct ggagtgcagt ggtgcaatct        60
tggctcactg caagctctgc ctcccaggtt cacgccattc tcctgcctca gcctcccgag       120
tagctgggac taca                                                         134




      <210> 165
      <211> 839
      <212> DNA
      <213> Homo sapiens




      <400> 165
cctgagcccg gcgagcagga gaggaggtct tccgggccgc ggcctccgag cgcgcgggat        60
ttgcagaact taatatgaat gtgaagaact tgcaaagaaa cttgaaaaca gccaaaggga       120
tggcatatca agaaataaat tggccttggc agaattgtat gaagatgaag tgaagtgcaa       180
atcttccaag tctaatagac ctaaagccac agtcttcaag agcccacgga caccacctca       240
acggttttac tcaagtgaac atgaatacag tggattaaat atagttcgac cttcaactgg       300
gaaaattgtg aatgaacttt tcaaagaggc aagggaacat ggggctgtcc ctctgaatga       360
agccacaaga gcttcaggtg atgataaatc taagtcattt acaggtggag gatacagatt       420
gggtagttct ttttgtaagc ggtctgaata tatctatgga gaaaatcagc tgcaagatgt       480
tcagattttg cttaaactgt ggagcaatgg tttcagttta gatgatggag aattgagacc       540
ttacaatgaa ccaacaaatg ctcaatttct ggagtctgtt aagagagggg tgactctcat       600
tgcatgtatg cctgaaattc agcaacttat gttagaaatc ttttaatgtg gcattactgc       660
tggcagaaga tttcaaaagg ttagtttgaa gttataattt gtgaaagtaa actcagatat       720
tcagtgctct cacccatcca aagaacattg taacttacca gctcttcttg ctaaaggatg       780
aggaatcaag tgattttgct atgataataa aagcttttct gtgttatgat taaaaaaaa        839




      <210> 166
      <211> 1256
      <212> DNA
      <213> Homo sapiens




      <400> 166
ctcgatcacc tgatggccct gcggcgcagc tcccgggttg acccacgcgt ccgagcggat        60
gttcactctc acgaccatga ttcaagctct tgcacctgtt atgggatggg acaggaagcc       120
actgaagatg tttttcatcag aagagatgag aggacatctt catcatcatc ataaatgtct       180
gacgaagatc ctgaaggttg aggggcaggt tccagatctg ccatcctgcc tgcccctgac       240
tgacaacacc cgcatgctgg cctctatcct catcaacatg ctctatgatg acctgcgctg       300
```

```
tgacccggag cgcgatcact tccgcaagat ctgtgaggaa tatatcacgg gcaagtttga    360
cccccaggac atggacaaga acttgaatgc catccagaca gtgtcaggga tcctgcaggg    420
ccccttTgac ctgggcaacc agctgctggg actgaaaggt gtgatggaga tgatggtggc    480
actatgtggc tcagagcgcg agacggacca gctggtggcc gtggaggccc tcatccatgc    540
ctccacgaag ctcagccgcg ccaccttcat catcaccaat ggagtgtcac tgctcaaaca    600
gatctacaag accaccaaaa atgagaagat caagatccgc acactggtgg gactctgtaa    660
gctcggctct gcaggtggca cagactacgg tctcaggcag tttgcggaag ggtcgacaga    720
aaaactggcc aaacagtgtc gcaagtggct gtgcaatatg tccatagaca ctcggacccg    780
acgctgggca gtggagggcc tggcctacct cacgctggac gctgatgtga aggacgactt    840
tgtccaggac gtccctgccc tgcaggccat gtttgagctg gccaagacca gtgacaagac    900
catcctgtac tcggtggcca ccaccctggt gaactgcacc aacagctacg atgtcaagga    960
ggtcatccca gagcttgtcc agctcgccaa gttctccaag cagcatgtgc ccgaggaaca    1020
ccccaaggac aagaaggact ttatagacat gcgggtgaag cggcttctga aggcgggtgt    1080
catctctgcc ctggcttgca tggtgaaagc agatagtgcc atcctcactg accagaccaa    1140
ggagctgctg ccagggtat tcctggcact gtgtgacaac ccaaaggacc gaggcaccat    1200
tgtggctcaa ggtggtggca aggccctgat tcccctggct ttggagggca cagatg        1256
```

```
    <210> 167
    <211> 892
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 167
atgtggacag cgtgggtggc ggcagcgagt ctcggtccct ggactcaccc acttccagcc    60
caggcgctgg cacgaggcag ctggtgaagg cttcgtccac aggcactgag tcctcagatg    120
actttgagga gcgagaccct gacctgggag acgggctgga gaatgggctg ggcagcccct    180
tcgggaagtg gacactgtcc agcgcggctc agacccacca gctgcggcga ctgcggggcc    240
cagccaagtg ccgcgagtgc gaagccttca tggtcagcgg gacggagtgt gaggagtgct    300
ttctgacctg ccacaagcgc tgcctggaga ctctcctgat cctctgtgga cacaggcggc    360
tcccagcccg gacaccctt tttggggttg acttcctgca gctacccagg gacttcccgg    420
aggaggtacc ctttgtggtc acgaagtgca cggctgagat agaacaccgt gccctggatg    480
tgcagggcat ttaccgggtc agcgggtccc gggtccgtgt ggagcggctg tgccaggctt    540
tcgagaatgg ccgagcgttg gtggagctgt cggggaactc gcctcatgac gtctcgagtg    600
tcctcaagcg atttcttcag gagctcaccg agccgtgat ccccttccac ctctacgacg    660
ccttcatctc tctggctaag accttgcatg cagaccctgg gacgaccct gggacccca    720
gccccagccc tgaggttatc cgctcgctga agaccctctt ggtacagctg cctgactcta    780
actacaacac cctgcggcac ctggtggccc atctgttcag ggtggctgca cgatttatgg    840
aaaacaagat gtctgccaac aacctgggca ttgtgtttgg gccgacactg ct           892
```

```
    <210> 168
    <211> 394
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 168
ggactccatg tcatctctct gcacagcgct gatggtcgtc actgggagga tccccttTct    60
gagcttgaca gtgaacgtgt gtctgcattt cttgtcactg agaccctggt gttctatttg    120
ttctgtctcc ttgcagatga aaccgtcgtg ccaccagatg ttccaagcta cctctcttct    180
```

```
cagggggaccc tttctgaccg acaagaaacc gtggtcagga ccgagggtgg ccctcaggcc      240
aatgggcaca ttgagagcaa tggtaaggcc tcagtaaccg tgaagcagag ctctgctgtg      300
actgtgtctc tgggtgctgg aggtggcctc caggtcttta cagggcaggt acctggcatt      360
agatggggca aacttggtga agcccacgcg tccg                                 394
```

```
        <210> 169
        <211> 550
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 169
ctgtgacacc tccgggcagc ccggcacttg ttgctcccac gacctgttgt cattcccttta      60
acccggcttt ccccgtggcc ccccgcctcc tcccggcttc gctccttttc atgtgagcat      120
ctgggacact gatctctcag accccgctgc tcgggctgga gaatagatgg ttttgtgaaa      180
aattaaacac cgccctgaag aggagccccg ctgggcagcg gcaggagcgc agagtgctgg      240
cccaggtgct gcagaggtgg cgcctcccccg gcccgggacg gtagcccccgg gcgccaacgg      300
catgacagac tcggcgacag ctaacgggga cgacagggac cccgagatcg agctctttgt      360
gaaggctgga atcgatggag aaagcatcgg caactgtcct ttctctcagc gcctcttcat      420
gatcctctgg ctgaaaggag tcgtgttcaa tgtcaccact gtggatctga aaagaaagcc      480
agctgacctg cgcaacctag ccccccggaac gcacccgccc tttctggcct tcaactggta      540
cgtgaagaca                                                           550
```

```
        <210> 170
        <211> 422
        <212> DNA
        <213> Homo sapiens
```

/

```
        <400> 170
cttggattca gtgatggaca ggaagccagg cctgaagaaa ttggctggtt aaatggctat      60
aatgaaacca caggggaaag gggggacttt ccgggaactt acgtagaata tattggaagg      120
aaaaaaatct cgcctcccac accaaagccc cggccacctc ggcctcttcc tgttgcacca      180
ggttcttcga aaactgaagc agatgttgaa caacaagtgc tctacaagta tagaaagaag      240
ccttcctctt cccaccgtcc ccagacacca cataatggaa aaagcaagaa ttttctgcat      300
aagcaaggcc ttaaaaaaaa aaagccagc ctctgatggg acttttttcc tgccaaaaat      360
cccactggtc cactgtcgca atttttacaa aaggccacga taaaagagta aggcccattt      420
tg                                                                    422
```

```
        <210> 171
        <211> 1042
        <212> DNA
        <213> Homo sapiens
```

<400> 171

```
cggacgcgtg  gggtcatgga  gctggcactg  cggcgctctc  ccgtcccgcg  gtggttgctg        60
ctgctgccgc  tgctgctggg  cctgaacgca  ggagctgtca  ttgactggcc  cacagaggag       120
ggcaaggaag  tatgggatta  tgtgacggtc  cgcaaggatg  cctacatgtt  ctggtggctc       180
tattatgcca  ccaactcctg  caagaacttc  tcagaactgc  ccctggtcat  gtggcttcag       240
ggcggtccag  gcggttctag  cactggattt  ggaaactttg  aggaaattgg  gcccccttgac      300
agtgatctca  aaccacggaa  aaccacctgg  ctccaggctg  ccagtctcct  atttgtggat       360
aatcccgtgg  gcactgggtt  cagttatgtg  aatggtagtg  gtgcctatgc  caaggacctg       420
gctatggtgg  cttcagacat  gatgggtctc  ctgaagacct  tcttcagttg  ccacaaagaa       480
ttccagacag  ttccattcta  cattttctca  gagtcctatg  gaggaaaaat  ggcagctggc       540
attggtctag  agctttataa  ggccattcag  cgagggacca  tcaagtgcaa  ctttgcgggg      600
gttgccttgg  gtgattcctg  gatctcccct  gttgattcgg  tgctctcctg  gggaccttac       660
ctgtacagca  tgtctcttct  cgaagacaaa  ggtctggcag  aggtgtctaa  ggttgcagag       720
caagtactga  atgccgtaaa  taaggggctc  tacagagagg  ccacagagct  gtgggggaaa       780
gcagaaatga  tcattgaaca  ggtaaaaagg  ggaaacactc  agaggcgagc  ctgcttggct       840
ttttctggtg  ggtacagggc  ccatggttgg  tgttgtcaaa  cttggagtct  acactgaggc       900
tccccacata  tctgcaaatg  attgcatgct  ggataataaa  tctcttgggt  ctaagcagtg       960
atgtagtggc  tccttacaga  gtcagaaagc  cacccaggcc  tgcaagactt  gcttgtcctt      1020
cactaaatgt  aaaaattcta  tt                                                  1042
```


<210> 172
<211> 890
<212> DNA
<213> Homo sapiens

<400> 172

```
aaagtagtag  gttggtgcaa  acgtagtaat  aaattggttt  ggccctgttt  tcatagaact        60
atagaggttg  gacctttgtc  cccttccaga  tgcctacaaa  caaactgatg  ttttttgattt       120
tttttctttt  ttaaattttg  gttgccacta  attcttataa  aaatcctcac  acaaggctgg       180
gctcagtggc  tcacacctgt  aatcccagca  ctttgggagg  ctgaggcagg  cggatcacga       240
ggtcaggaga  tcgagaccat  cctggctaac  acggtgaaac  ccccgtctct  actaaaaata       300
caaaaaatt   agccgggcgt  ggtggcgggc  gcctgtagtc  ccagctactc  gggaggctga       360
ggcaggagaa  tggcgtgaac  ccgggaggca  gagcttgcag  tgagccgaga  tagcgccact       420
gcactccagc  ctgggcgaca  gagcaagact  ccatctcaaa  aaaaaaaaa   agtgataata       480
ctgtaatccc  agcactttgg  gaggccgagg  caggcggatc  acgaggtcag  gagatcgaga       540
ccatcctggc  taacacggtg  aaaccccgtc  tctactaaaa  atacaaaaaa  ttagctgggc      600
gtggtggcgg  gcacctgtag  tcccagctac  ctgggaggct  gaggcaggag  aatggcgtga       660
acccaggagg  cggagcttgc  agtgagcgga  gatcatgcca  ctgcacttca  gcctgggcga       720
cagagcaaga  ctccatctca  aaaaacacac  acacacacac  acacacacac  acacacacaa       780
atagaaaaat  aataatagtt  ttaagcacct  ctaaagtaca  gatattgtgc  caagcaattt       840
atgtgaattg  attagattga  taactctaaa  aatagtttcc  ctaatcaact                   890
```


<210> 173
<211> 1922
<212> DNA
<213> Homo sapiens

```
        <400> 173
tttctttctt catccaaaat agtagagatg tctttcccac gatgacctgt gatggtggag      60
atatctttc ctcggccaac tcctcctcca tcggcttctt tgatgtcatc ttcaatagct     120
tcatcaattg cttcatcaaa ctcatcaaat ctgtagctta tacatttcct tgttcttgtt     180
gacctccttt caaagcaagt ttgctttgga ttttttgaa tctttttct tttcttcttg     240
atcttcagaa aagtctggct ctttgtggag gaatgatgtt ttcaatactg gataccaaca     300
tacaccaagc gttctttttcc ttcgttccgg caacgctctt tccttcttta aggcaacatc     360
ccaaatcctg gaaactggtc ctctaatttt tccaacaaga gcaagtttaa tgttgggcaa     420
aaggtggggc aagaacccat cctcccatct ggggatggat catcagagga ggggcgaaag     480
gcagggcagt atggtatcca ctatcgcaag agtcacacag aagaattagc tcaggatggt     540
ttggaaggcc acattttttg catggttcat catcatctgc taggatggct tcttcacttt     600
cctttctttc ctcctcttct gaagctgcag atgattttttc actgccagac ccttcacttt     660
catcattgct ggaatatttc catctgccac gtgtccgaga accagtccat cgaactttgc     720
ctttgggttt taccttgctt actttagaat ttgtatcttt ctctgatttt ttcaaaatt     780
cctttttgtc agttttttgc aaagctgttg actcttcttc cacctcatct tctccttccc     840
ctctttttttt atcagctttc tgatctctga tctcagccac ttttgcagtg ggtctagata     900
ttcttggaga tcttcttaaa gtacgaccca catttgtttt ctcctcttcc ttttctgtct     960
tctcttgctt gttttctggt tctagaactt tggggggaga atcgggcttc ttttttccgac    1020
ttgatatcct gattgttaat ttgatgccct ctttctgcct ttcagaggtt atctctgtat    1080
tttctgaggc agtggtttct tcttcaggaa ccaacttata tttgaatttg ctttttttgca    1140
tagaacccctt tgtctcagaa ggctcctcta tgccagaggt ctgggcattg tccagattat    1200
ccatttctac ctttgtgaac tcagaatcct cttttagggt ttctaggtct acttttttca    1260
cagactggcc accaacagta cttgtactct ggcattctac cacttctttt tctgaggcta    1320
gtttctcaca gtggtcaatg atattagatg gtggagaagt ttcagctgcc tcaggagagc    1380
caggcttttc tgactctaga gtactctttg gaacttcttc tggtattgga ctcaatcttt    1440
gtgcgtcctt atcaagaaaa gtcttttttgg acttctctaa ctttttcaaga cattctagga    1500
ttggtgggcg cttatccttc ttagttttgg gagacttctc ttcacctttc atggtacacg    1560
actcggtgga agataaagca gttttttgaag agagatcttt tgccatctca gaagaatcaa    1620
gagaagtttc catttctgga ggatcgggtt cctctatttg tgcttttttga ctatggatct    1680
ctaagactga tattgaacta tctgcatctt tcctcaaagg ggctgtttct ttctcaagct    1740
cacctgtttt catacttggt tatgacagaa tttaaggact ctgttccatt tccctccgtg    1800
atgatatttc tgtccttagg ggggctatag ctctcttcct ttgtctcata aaactttgtc    1860
tctacttggt tctgtcttaa aatttggagc taccctttca tcactaactt ctccatttac    1920
ca                                                                    1922
```



```
        <210> 174
        <211> 537
        <212> DNA
        <213> Homo sapiens
```



```
        <400> 174
aaaagcggcg cggctcgttc aagatggcgg agctcgacca gttgcctgac gagagctctt      60
cagcaaaagc ccttgtcagt ttaaaagaag gaagcttatc taacacgtgg aatgaaaagt     120
acagttcttt acagaaaaca cctgtttgga aaggcaggaa tacaagctct gctgtggaaa     180
tgcctttcag aaattcaaaa cgaagtcgac ttttttctga tgaagatgat aggcaaataa     240
atacaaggtc acctaaaaga aaccagaggg ttgcaatggt tccacagaaa tttacagcaa     300
caatgtcaac accagataag aaagcttcac agaagattgg ttttcgatta cgtaatctgc     360
tcaagcttcc taaagcacat aaatggtgta tatacgagtg gttctattca aatatagata     420
aaccactttt tgaaggtgat aatgactttt gtgtatgtct aaaggaatct tttcctaatt     480
tgaaaacaag aaagttaaca agagtagaat ggggaaaaat tcggcggctt atgggaa       537
```

```
<210> 175
<211> 659
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(659)
<223> n = a,t,c or g
```

```
<400> 175
tctctctttg ccagtaatgt tggaagtgga catttcattg gcctggcagg gtcaggtgct      60
gctacgggca tttctgtatc agcttatgaa cttaatggct tgttttctgt gctgatgttg     120
gcctgggtct tcctacccat ctacattgct ggtcaggtca ccacgatgcc agaataccta     180
cggaagcgct tcggtggcat cagaatcccc atcatcctgg ctgtactcta cctatttatc     240
tacatcttca ccaagatctc ggtagacatg tatgcgggtg ccatcttcat ccagcagtct     300
ttgcacctgg atctgtacct ggccatagtt gggctactgg ccatcactgc tgtatacacg      360
gttgctggtg gcctggctgc tgtgatctac acggatgccc tgcagacgct gatcatgctt     420
ataggagcgc tcaccttgat gggctacagt ttcgccgcgg ttggtgggat ggaaggactg     480
aaggagaagt acttcttggc cctggctagc aaccggagtg agaacagcag ctgcgggctg     540
ccccgggaag atgcctttca tatttttcga gatccgctga catctgatct cccgtggccg     600
ggggtcctat ttggaatgtc catcccatcc ctctggtact ggngcacgga tcaggtgaa      659
```

```
<210> 176
<211> 1033
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1033)
<223> n = a,t,c or g
```

```
<400> 176
cccacgcgtc cggatgtgtg ctcacacttg ggggacctga ttggggcttc agaccttggg      60
ggcctgtccg cagggtctcc tccatccttc ttgatttgcc tgtcattgag gctgcccgct     120
ctgggcgcca ttccccagcc taacacctct tctcagtctt tccttgcagg tccctggagt     180
ccaggccttg gggcagtgaa gaaaccgtgg ggaggggcat gagatgccag tccccaaagt     240
ccttgggagc ccttgtgggc caagtcattg taggacacac cctctcctgg gcattgctga     300
ggtcacccag tgagcctagg ctcccccctc ctcccatccc cagcctgggg gaaccttcag      360
cgtctctcct ccctgtaggc cccggctcag cttcccagga acttttgttg gtgggtacta     420
gtagggtaag gcagttcttc ccatcatgag ggagaccttg ggagactttc attaccaaat     480
ccattgctgc cccgaccttc ctgggactga tctgggtcac cctggtctcc tgatcttgga     540
gaagtcaagt tcttatccca gacttgagag gttacaagcc tccaggtctc tggcaaagtg     600
tggagatgat ggacagccat ttgtacacac accagccagt cccttagcat atctctcttg     660
gttttgtctc aggtctgcct cagccacctc cctgacgctg tcccactgtg tggatgtggt     720
gaaggggctt ctggatttta agaagaggag aggtcactca attgggggag cccctgagca     780
gcgataccag atcatccctg tgtgtgtggc tgcccgactt cctacccggg ctcaggatgt     840
gctgcagcct cctggccact ggaggggctg accgcctgat ccacctctgg aatgttgtgg     900
gaagtcgcct ggaggccaac cagaccctgg agggagctgg tggcagcatc accagtgtgg     960
actttgaccc ctcgggctac caggtttttag cagcaactta caaccaggtt gcccagtttt    1020
ggaaggtngg gga                                                        1033
```

```
       <210> 177
       <211> 335
       <212> DNA
       <213> Homo sapiens



       <400> 177
gtcaaaaacg atttcctagc aactgtggcc gtgatggaaa actgtttctt tggggacaag     60
cacttcatat catcgcaaaa ctcctgggta agtggagaag attgggaatg gtattttttt    120
ccttgttatt aagctattag aaataaatat gcctttgctg gcacataata gtactttggt    180
acaacaggat atcctatgga gtttaaaaat aagtatttaa aatataacaa atctgtatta    240
gtccattctc atgctactaa taaagatata cccaagactg ggtaatttat aaaggaagga    300
gttttaatgg cctcacagtt ccgtcgacgc gggcg                                335




       <210> 178
       <211> 556
       <212> DNA
       <213> Homo sapiens

       <220>
       <221> misc_feature
       <222> (1)...(556)
       <223> n = a,t,c or g




       <400> 178
gttcacgtct gcagcagtaa gatgggagct ttgtccacgg agcggctaca gtactacact     60
caggaactgg gggtccggga gcgcagtggc cacagcgtgt ccctcatcga cctctggggc    120
ctccttgttg agtatctcct gtaccaggag gagaaccctg ccaagctgtc tgaccaacag    180
gaggcggtcc gccagggtca gaacccttac cccatttaca ccagtgtcaa cgtccgcacc    240
aacttgagtg gggaagattt tgcagagtgg tgcgagttca cgccctatga ggttggcttc    300
cccaagtacg gggcttatgt tcccaccgag ctcttcggct cagaactctt catgggacga    360
ttgctgcagc tccagcctga accccggatc tgttacctgc aaggtatgtg gggcagcgcc    420
tttgccacca gcctggatga gatcttccta aagaccgccg gctcgggcct cagcttcctg    480
gagtggtaca gaggcagtgt gaatatcaca gacgactgcc agaagcctca gctgcacaac    540
ncctcgacgc gggaat                                                     556




       <210> 179
       <211> 631
       <212> DNA
       <213> Homo sapiens
```

```
        <400> 179
gaatttctgg gtcgtcccac gcgtcccgca aaggatgagg gaaacgatga gggaaaggat      60
gagggaaagg atgagggaaa ggatgaggga aaggatgagg gaaaggatga gggaaaggat     120
gagagaaagg atgagggaaa ggatgaggga aaggatgaga gaaaggatga gggaaaggat     180
gagggaaagg atgagggaaa ggatgaggga aaggatgagg gaaaggatga gggaaaggat     240
gagggaaagg atgagggaaa cgatgaggga aaggatgagg gaaaggatga gggaaaggat     300
gagggaaagg atgagggaaa ggatgaggga aaggatgagg gaaacgatga gggaaacgat     360
gagggaaacg atgagggaaa ggatgaggga aaggatgaga gaaacgatga gggaaaggat     420
gagggaaagg atgagggaaa ggatgaggga aaggatgaga gaaacgatga gggaaaggat     480
gagagaaagg atgagggaaa ggatgaggga aaggatgagg gaaaggatga gggaaaggat     540
gagggaaagg atgagggaaa cgatgaggga aaggatgaga gaaaggatga gggaaaggat     600
gagggaaagg atgagggaaa ggataagtaa g                                    631
```

```
        <210> 180
        <211> 469
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(469)
        <223> n = a,t,c or g
```

```
        <400> 180
ggcggggctc ntttgagacc tgatgaccat cattacgccc agcttggcac gagggggagg      60
acttcagcta cggcctgcag ccctactgcg ggtactcctt ccaggttgtg ggggagatga     120
tccggaaccg ggaggtgctg ccttgccccg atgactgtcc cgcctgggcg tatgccctca     180
tgatcgaggg ctggaacgag ttccccagcc ggagggcccg ctttaaggac atccacagcc     240
ggctccgagc ctggggcaac ctttccaact acaacagctc ggagcagacc tcggggggca     300
gaaacaccac gcagaccagc tccctgagca ccagcccact gtgcaatgtg agcaacgccc     360
cctacgtggg gcccaagcag aaggtcccgc cctttccaca gacccaggtc atccccatga     420
agggccagat cagacccatg gtgccccgc cgcagctata cgtccccgg                  469
```

```
        <210> 181
        <211> 453
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 181
caggaattcc gggcgccacc cacgcgttcg atggatcctg gaagagcgca agcgggtgat      60
gcaggaggcc tgcgccaagt accgggcgag cagcagccgc cgggccgtca cgccccgcca     120
cgtgtcccgt atcttcgtgg aggaccgcca ccgcgtgctc tactgcgagg tgcccaaggc     180
cggctgctcc aattggaagc gggtgctcat ggtgctggcc ggcctggcct cgtccactgc     240
cgacatccag cacaacaccg tccactatgg cagcgctctc aagcgcctgg acaccttcga     300
ccgccagggt atcttgcacc gtctcagcac ctacaccaag atgctctttg tccgcgagcc     360
cttcgagagg ctggtgtccg ccttccgcga caagtttgag cacccccaaca gctactatca     420
cccggtcttc tgcatggcca tactggcccg gta                                  453
```

```
<210> 182
<211> 377
<212> DNA
<213> Homo sapiens


<400> 182
cataatgtat agtatttctc ctgccaactc tgaggaaggc caggaacttt atgtctgcac        60
agtcaaggat gatgtgaact tggatacagt acttctccta ccctttttga aagaaatagc       120
agtaagccaa ctggatcaac tgagcccaga ggaacagttg ctggtcaagt gtgctgcaat       180
cattggtcac tccttccata tagatttgct gcagcacctc ctgcctggct gggataaaaa       240
taagctactt caggtcttga gagctcttgt ggatatacat gtgctctgct ggtctgacaa       300
gagccaagag cttcctgctg agcccatatt aatgccttcc tctatcgaca tcattgatgg       360
aaccaaagag aagaaga                                                       377




<210> 183
<211> 621
<212> DNA
<213> Homo sapiens


<400> 183
ctcatcctta aagtgacaga gtaaattaac tctaaggccc catccaggac tcaagctgtg        60
tgattttaca aaaatgaaaa ttatattaat aatcccattg taaaatccca aaagaaagtc       120
aagagactag cagaaagaca ggtgggtgat gggatgtcct ggacagagcc tggatcatga       180
ggtccccatg tagtgcttgt actacgcaga tgtttcctct tgagctattt taaaggtgtg       240
gaaaaagcca aagcaatgcc ctctccacgg atactaaaga ctcacctttc cactcagctg       300
ctgccaccgt ctttctggga aaacaactgc aaggtaagat accaacagct ccctgtgaca       360
gaagggaaag taagccaacc aaagcgagtc ctgcagaccc caacgcagag cattcgtgat       420
caccttttgcc tctccactgt ctctgatgct taccagcaaa gagaaaacat aaagttctac       480
attcagcagg acattcacct gaacagtttc aaataggaca tgaaggcagg atccagattg       540
aatgtttgga gggaactaga gacatgggga ggcagtgagt gcagtaagcg tagctgtgaa       600
atgaagggga gaagatggtg g                                                  621




<210> 184
<211> 415
<212> DNA
<213> Homo sapiens


<400> 184
accgggacga cccacgcgtc cgggaattta attctattat atatgcagac tttctaaaga        60
```

```
agataaagct tttttatggg agaaacgtta ttattgcttc aaacacccaa attgtcttcc      120
taaaatatta gcaagcgccc caaactggaa atgggttaat cttgccaaaa cttactcatt      180
gcttcaccag tggcctgcat tgtacccact aattgcattg gaacttcttg attcaaagta      240
agtcaaatac atttatttgc tcttgtttta ttgtcagttt ttccagtaag gtatgttgcc      300
agaagtattt cctttccttt taacatgaaa gcaattcaat ataatccaaa tgtgtaaatg      360
tatatttata caaacatatc ttctgcattg aagttgtcaa taaagcattg catgt           415
```

<210> 185
<211> 359
<212> DNA
<213> Homo sapiens

<400> 185
```
ggaaaatgat gatttgaggt ttatttgaaa tacaacaatg tccaatagga aaacactgca       60
actttcttca ggtgttgaga aatccaatag agacctctgc ttgtctcctc ctttggcaag      120
agctccaagg ggagagagag gatgggccac cacgatgaat actacaggct gcggggaagg      180
ataaccctag tccagaccat tcctacaaaa gaaatgggga atccgaaagg aaaaggaaga      240
aatctcacta gcacatgtca aagagccagg agaggcacaa ttcaccaagc agaggaagaa      300
atagtgaccg cagcgggggc cggtgcagcc gcagtgataa cggtcggagc cgttacagg       359
```

<210> 186
<211> 1616
<212> DNA
<213> Homo sapiens

<400> 186
```
ggaggttgcg gcggcggctg cggcgcagcc cggggcggcg ggtgggaaga ggactaccag       60
aggggcctgc gggagaccca gggtcggacc cataggagtc ctgtcgtcag gacctccttg      120
atcggtcttc tgcttgggtt ctcggtgaag gaggagcttc ggggtgtcgg ctgggctgcg      180
cggactcctc ttgggatccg atgatggatc ccacccggtg atcgggaatg gggttacaat      240
gcagtgaggc ggaaaggctc tcgccggggc acagaaagat ccccagggcc gcaaggcgtg      300
ctgtcgcctg caaaggcact gacccacgag cccactgcct ccctccttcc tgggtggagc      360
aggggcctgc cttcatctcc aaggcccggg ggctccggca tctcgacgcg gcttccggcg      420
acacgggcaa agagagacag aggctagtcc gagccggagc cagtgtgacc acacgtggca      480
ctgacgtccc ccaagagcac atgcagtgag cctgtgtctc tgaggccgta gtgggcgacg      540
acgagacgga cagtgatgtc caggcctgcg cccgggggcc actggagacc tgcccctcaa      600
agcggaggaa acgccaagct cacctgaaaa cctgcgagac agggcctgtg cacgagtcca      660
gtactcctac ttcgccaagt ctcagggacc catccccgag caacggtggc ggcgcagaga      720
agagcacggc gccggcgcag gtgcagagag acaggaggct gatgggggga agttgaggca      780
cctggggcag agaaaaaaat gcattgccaa gaggtttctg ggtcatctac tgacgaaaat      840
gtcttccat cagcccttgc gctggtcccc agggaccctg gcatccgtcg ttggcgccca      900
gggtgcgcgt cgggccacta ggggtacccc aactcggaca gaaggcccat gagttgaatt      960
tgaagtttgt gggaatagag gtgaggcacc aggggcagaa aaaaacagg agacctcgcc     1020
tcagacaagc ggggcctggg tccccatgg atgaaagtgc cttcccatta tgctgtaccc     1080
tgggcagagt ggacagtgac gaccctggtt cgagcccagg gtgcgcttcg gaccgcttg     1140
cggttaccag aaagcgaaca aatggtccat gagcggaagg tgaggcacct gaggcagaga     1200
aagtaaagaa acgcgccgcc gagaagcagt gcctgggtcc ctcacggagg aaattgtctt     1260
ctccttagcc cgttcgcttg gcagtgaggt ccctggcgtc cctggtttga tcccagggta     1320
```

80

```
cgcctcgggc cactagtgtt accccaaggt gggcagaaag cccataaggg gaaggcgagg   1380
cacctggggc agagaaaaaa aaaaacttcg ccgcaaagaa gcgcggcctg attccccacg   1440
gacgaaagtg tcttcccatc agtccctgca ctgggacccg gggaccctgg tgtccctggt   1500
tcgagctcag ggtgtgcctc agccgctacg tgcaccccaa ggggagcttt gggagcccaa   1560
aagccaataa gggaaagtaa tttttaaggc ccccagtggt gaggcccctg tcacag        1616
```

<210> 187
<211> 916
<212> DNA
<213> Homo sapiens

<400> 187
```
ttttgataag aggcaacatg aagcaagaat ccagcaaatg gagaatgaaa ttcactattt    60
gcaagaaaat ctaaaaagta tggaggaaat ccaaggcctt acagatctcc aacttcagga   120
agctgatgaa gagaaggaga gaattctggc ccaactccga gagttagaga aaaagaagaa   180
acttgaagat gccaaatctc aggagcaagt ttttggttta gataaagaac tgaagaaact   240
aaagaaagcc gtggccacct ctgataagct agccacagct gagctcacca ttgccaaaga   300
ccagctgaag tcccttcatg gaactgttat gaaaattaac caggagcgag cagaggagtt   360
gcaggaagca gagaggttca gcagaaaggc agcacaagca gccagagatc tcacccgagc   420
agaagctgag atcgaactcc tgcagaatct cctcaggcag aaggggggagc agtttcgact   480
tgagatggag aaaacaggtg taggtactgg agcaaactca caggtcctag aaattgagaa   540
actgaatgag acaatggaac gacaaaggac agagattgca aggctgcaga atgtactata   600
cctcactgga agtgacaaca aaggaggctt tgaaaatgtt ttagaagaaa ttgctgaact   660
tcgacgtgaa ggttcttatc agaatgatta cataagcagc atggcagatc ctttcaaaag   720
acgaggctat tggtacttta tgccaccacc accatcatca aaagtttcca gccatagttc   780
ccaggccacc aaggactctg gtgttggcct taagtactca gcctcaactc ctgttagaaa   840
accacgccct gggcagcagg atgggaagga aggcagtcaa cctccccctg cctcaggata    900
ctgggtttat tctccc                                                   916
```

<210> 188
<211> 1080
<212> DNA
<213> Homo sapiens

<400> 188
```
cctctactgc agcttcatca tcagattctt ctttctgttc ttggggtgct tcttcttcct    60
ccatgggctc ctcaacagtt tcagtcttgc tgctccatac ataaatagga aagtttatga   120
actgtgaata ttttttgacg agatttttaa ttgtatccaa ttcaaggtaa tcagatgctt   180
cttctttttaa gacaagggta attgtcgttc cccgtcctag agtgtttcct cttgggtcag   240
caattacaga aaaattcattg gagtcagact cccagattgg ccagtttggt gtcggtttct   300
attccgcctt ccttgtagca gataaggtta ttgtcacttc aaaacacaac aacgataccc   360
agcacatctg ggagtctgac tccaatgaat tttctgtaat tgctgaccca agaggaaaca   420
ctctaggacg gggaacgaca attacccttg tcttaaaaga agaagcatct gattaccttg   480
aattggatac aattaaaaat ctcgtcaaaa aatattcaca gttcataaac tttcctattt   540
atgtatggag cagcaagact gaaactgttg aggagcccat ggaggaagaa gaagcagcca   600
aagaagagaa agaagaatct gatgatgaag ctgcagtaga ggaagaagaa gaagaaaga    660
aaccaaagac taaaaaagtt gaaaaaactg tctgggactg ggaacttatg aatgatatca   720
aaccaatatg gcagagacca tcaaaagaag tagaagaaga tgaatacaaa gctttctaca   780
```

```
aatcatttc aaaggaaagt gatgacccca tggcttatat tcactttact gctgaagggg      840
aagttacctt caaatcaatt ttatttgtac ccacatctgc tccacgtggt ctgtttgacg      900
aatatggatc taaaaagagc gattacatta agctctatgt gcgccgtgta ttcatcacag      960
acgacttcca tgatatgatg cctaaatacc tcaattttgt caagggtgtg gtggactcag     1020
atgatctccc cttgaatgtt tcccgcgaga ctcttcagca acataaactg cttaaggtga     1080
```

```
<210> 189
<211> 1344
<212> DNA
<213> Homo sapiens
```

```
<400> 189
ttttttttt ttgctgctgg gtcgggtttt atttcaaatg cagccacaga ggcggtttct       60
gcacaggtac gtgatccgac tccacaagct cccaccaggg gctccccatg acccgcaatg      120
acgctgtgtg gggtcaaagg aaaacaggcc acagccaggc ccctcgatgg acgcaggcag      180
gggaccagga atgcggccca cgcaggggga tcgggaatca ggcggaaggt gcaggtttgc      240
agctggcggg aggagccagc atgccccaat ctctaaaata ttccccggtag aaaaatagac      300
atttccctcc aaagcagatt cctggggctg gagggtccct ccaaggccag gggtccgggt      360
gattccagag catccacgct ctgcgctgaa ggcactgaac ctgccatcac tgtcacagcc      420
gtcaccggcc aaggagggtc tggaggaggg aaggggcect tgcgaggctc tggtgctggt      480
gatcccggcc cccaccaccg gaggagctga aagcccttgc tcagccgctg ccctgctggt      540
gaacccggcc cccaccgccg gaggagctgc accctgtgtg gtctgaggca gccctgcact      600
gggcagcggc cccgccccgc gctgaaccca ctaggagagc agctgcagca cctgtcggat      660
gcgctgggcc ctccccggca ggggggggatc agagccctcc tcatccagct cccgcatcag      720
ggcttccgcc ttctgcaccg tcagctctcg ggcccggccc tgcagcccct ccaggtaggc      780
cagcagggtg gagaagtgct catcgggaac cttgtcactg tcatacatgt gcagcaggag      840
ccacgtctgc ctcgtcttct gaaacctcca gttcttgtgc ttttgggccc atctgcagag      900
gtagtccagg gccagttcgg cccccgagcg cctggcaggc gggtgctggg ccacaaggcc      960
tgcctcccgc agacgctgcc tctcctcttt cttccgttcc tttttcagct tcctttccag     1020
gaccctctgc tcctctgggg acagctctgg ctctgcgtcc agcccgggcc tgagcacagc     1080
ttcgcccttg gagccggctc cttcgccact tggtgcagcc tcagggccca gcagtggccc     1140
ctctgctgac gccttcttca gcttttttgtt cttttttctct gtcacttcag gaactttttct     1200
cttctgtttt gccatcctgc gcccacctgc gcccacgtcg cccacctaag cgtgaacagc     1260
tgcgtcgcgg acgccgcctt ccggcaggga cccgcggacg cgtgggtcga cccggcaaaa     1320
cgggtccaac ctaggcgtc gagg                                            1344
```

```
<210> 190
<211> 550
<212> DNA
<213> Homo sapiens
```

```
<400> 190
cccggaccca cgccgcccc cgcgccacggc tctcccccac accgccttat tcgggtcgag       60
accccggggc ccccggcgcc gcctgctgat gagcggatct ccggacccce cgccagcagc      120
gataggctag ctatcctaga agactatgcg gacccgtttg atgttcagga gactggcgaa      180
ggctcagcag gagcttcagg agccccagag aaggtccctg aaaatgatgg ctacatggag      240
ccctatgagg ctcaaaagat gatggccgag atccggggct caaggagac agcaactcag      300
cccttgcctc tgtatgacac accctatgag ccagaggagg atggggccac cccggaaggt      360
```

```
gagggggccc cctggccccg ggagtcccgc ctgccagagg atgatgagag gcccctgag      420
gagtatgacc agccctggga gtggaagaag gagcggattt ccaaagcctt tgcagttgac      480
attaaggtca tcaaagacct accttggcct ccacctgtgg gacagctgga cagcagcccc      540
tccctgcctg                                                            550
```

```
        <210> 191
        <211> 562
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 191
caatttttt ctctttttctt aaggtatcag atacacaccg gacttcaaca ttctatcata      60
agacctaccc aacccaactg tttacctctg gacaatgcca ccctacctca gaaactgaag      120
gaggttggat attcaacgca tatggtcgga aaatggcact tgggttttta cagaaaagaa      180
tgcatgccca ccagaagagg atttgatacc ttttttggtt ccctttttggg aagtggggat      240
tactatacac actacaaatg tgacagtcct gggatgtgtg gctatgactt gtatgaaaac      300
gacaatgctg cctgggacta tgacaatggc atatactcca cacagatgta cactcagaga      360
gtacagcaaa tcttagcttc ccataacccc acaaagccta tattttata tattgcctat      420
caagctgttc attcaccact gcaagctcct ggcaggtatt tcgaacacta ccgatccatt      480
atcaacataa acaggaggag atatgctgcc atgctttcct gcttagatga agcaatcaac      540
aacgtgacat tggctctaaa ag                                              562
```

```
        <210> 192
        <211> 2171
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 192
cacgcgtccg gaaaggaaga ggcggtgaga ggctgcaaag ccccttgcgt gttccgcaga      60
aaccagaaag acctcccctt ccacccaagc ctcagttcct aaactcaggg gcatatcctc      120
aaaaacctct tagaaatcag ggagtggtga ggacactgtc cagctctgcc caagaggaca      180
tcatccggtg gtttaaagag gagcagctac cacttcgagc gggctaccag aaaaacctcag      240
acaccatagc cccctggttc catggaattc tcacactcaa gaaagcaaat gaacttcttc      300
tgagcacagg catgcccggc agttttctca tccgagtcag tgaaaggatc aaaggctatg      360
ccctgtccta tctgtcggag gacggctgta aacatttcct catcgatgcc tctgcagacg      420
cctacagctt cctgggcgtg gaccagctac agcatgccac cttggcggat ttggtggaat      480
atcacaagga ggaacccatc acttccctgg ggaaggagct ccttctctat ccctgtggtc      540
agcaggacca gctgcctgac tacctggagc tgtttgagtg acagcctcca tcagggtcat      600
cctacagcct ccaagcgggc tttccccctgg acaaatgcca ctgcaacatt tatgtgtgaa      660
gccaaaatca ccctgcagca gagccaatac tgatcaactg aaagtatcca tggagtcctc      720
attgacacct ctttttctgca caaatactgg aattcaatgt caagagaaaa tgacctctgc      780
tcaaaaggga gaagagtctc aatttcagca agtacctgtc atgaagggta tgaccttaat      840
gatgtacata aaataaaaca aatgaagaaa tggaaaactt ttagaaatta aggtgtactt      900
gaaaacgagt atctatcata tgacccctgc actccctctg tatcatctca ggaggtttca      960
ggggcctgtt gacatgaagt ttcgaagttt catgttggct ttggaatggt agcaaaagcc      1020
tttcctggct gagatgatgc ttaaaacaca cctcacttat tgtacatgtt ggaaccagga      1080
catgagagac atagaaaaac agaagtcatg aatgtaaatt gaatgagagg cttaacatgc      1140
atgaaaatac agatggacct gcaggaaagt gagcaaacat cgctgagttt gttttcttgt      1200
```

```
tcgggagaat ggggccgggg ctggcctggc ctcccctgga tatactctat agtgcaccaa    1260
aaggataaag catctgtaca tgtattttt tatttttat cagaagtgct tagacaagaa    1320
cagaataagc aggctgtttg gatgctactt gtggttgaat tgtgttcccc caaaatatat    1380
ggtgaagtct taacccccat ccccgtgaat gggaccttgt ttggaaatag ggtctttgca    1440
gatatagtca agatgaggtc acattggatt agggtggggcc ccaaatccaa tgactggcat    1500
ccttaggaga agagagagtt ttggtaatag acacaaatgc agtgggaaga agaccagggg    1560
acaagaggca agttggagtg atgcagccgg aagggaaggg acaccaagga tctccggcca    1620
ccagcagaag ccagcagaga ggcatgggac aggttcccca caagccttag aaggaagcat    1680
ggccctgact tcagaattcc agactccaga actggaagaa taaatgtctg ttgttttaag    1740
ctgcttagtt catgctgagt tcatgctgac ttgttactat agccccagaa agctaataca    1800
gtcgtttatg taattacata acctgacaca caagatcgac ccattcactg ctgcccagtc    1860
caccattttc ataatgaagt agaaatggga ggtaagaaaa acattccagc cagttctgtt    1920
tagccctggg acacatattt gtcccgtcag gaatcttatg ccctcctgga accccgccc    1980
acctcagtcc agtcccagtc aggcgaacgg cctctggaca gggactgagg tggctttgag    2040
ccactggaga tcattttct tggaggatgg agattggcta gtacctctgg cctaactgtg    2100
taggtcaata ctctttaca ttgccttcta ataaaagcag aatgatacag cagtgttgtt    2160
aaaaaaaaaa a                                                         2171
```

<210> 193
<211> 2095
<212> DNA
<213> Homo sapiens

<400> 193
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ggggaagtct ggagaaggca ttgtttcaat tattaaaagt gtgggggcag tgggcggaac     60
aaacgcgccg actacagagg ctggacgtaa gcttatcggt ggcgcgcgtg cgcagcgccg    120
gcccgagttg ccaaaacaaa ggggatttgg tgatggaggc tttgttagaa ggaatacaaa    180
atcgagggca tggtgggggga ttttgacat cttgtgaagc agaactacag gagctcatga    240
aacagattga cataatggtg gctcataaaa aatctgaatg ggaaggacgt acacatgctc    300
tagaaacttg cttgaaaatc cgtgaacagg aacttaagag tcttaggagt cagttggatg    360
tgacacataa ggaggttgga atgttgcatc agcaggtaga agaacatgaa aaaatcaagc    420
aagagatgac catggaatat aagcaggagt tgaagaaact acatgaagaa ttatgcatac    480
tgaagagaag ctatgaaaag cttcagaaaa agcaaatgag ggaattcaga ggaaatacca    540
aaaatcacag gaagatcgg tctgaaattg agaggttaac tgcaaaaata gaggaattcc    600
gtcagaaatc gctggactgg gagaagcaac gcttgattta tcagcaacag gtatcttcac    660
tggaggcaca aaggaaggct ctggctgaac aatcagagat aattcaggct cagcttgtca    720
atcggaaaca gaaattagag tctgtggaac tttctagcca atcagaaatt caacacttaa    780
gcagtaaact ggagcgggct aatgacacta tctgtgccaa tgagttggaa atagagcgcc    840
tcaccatgag ggtcaatgac ttggttggaa ccagtatgac tgtcctacag gagcagcagc    900
aaaaagaaga aaaattgagg gaatctgaaa actattaga ggctctgcag gaagaaaaga    960
gagaattgaa ggcagctctt cagtctcaag aaaatctcat acatgaggcc agaatacaaa   1020
aggagaagtt acaagaaaaa gtaaaggcaa ctaacactca acatgctgta gaagctataa   1080
gtttggaatc tgtgagtgca acgtgtaaac agctgagcca agaactaatg gaaaaatatg   1140
aagaactgaa gaggatggaa gcacataaca atgaatacaa agcagagatt aagaagttga   1200
aagaacagat tttacagggt gaacaaagtt acagttctgc actagaagga atgaagatgg   1260
aaatctccca tctaactcag gagttacatc agcgagatat cactattgct tccaccaaag   1320
gttcttcctc agacatggaa aagcgactca gagcagagat gcaaaaggca gaagacaaag   1380
cagtagagca taaggagatt ttggatcagc tggagtcact caaattagaa aatcgtcatc   1440
tttctgaaat ggtgatgaaa ttggaattgg gtttacatga gtgttccttg cctgtatctc   1500
cccttggttc aatagctacc agatttttgg aagaggagga actgaggtct catcacattc   1560
tagagcgctt ggatgcccat attgaagaac taaaaagaga gagtgaaaag acagtgagac   1620
aattcacagc cttaaagtag cctcttaaaa aaatcacaat cttggaaata aaaataaaca   1680
ccaaagagtt actgtcatct gaagtagcag ctctttaaaa acatgaagag ataaaattat   1740
aaaaatgata catctaaagc agtggtgaag aaagctgaaa aactgatact tttgataggc   1800
attttctctg cactggtttt tttaaaggac ttcttccagc aataagttga aagaataaac   1860
cactttgcta gactttttc tcatacgaat atttattatc ataaagtgat acttaccttg   1920
```

84

```
ctgacttaaa tgtgaatagc tatgtactaa ttgaaataag gattttatga tacatgttga    1980
aaataaagta actgcaggaa ctttctttag gggaaatgtg tagaagcatg gatttagggg    2040
tcaaacatac ctggatcgat agactggttt tgccacttac cagccaacgg ggctt         2095
```

```
        <210> 194
        <211> 1051
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 194
gagaccttgt cttaaaaaaa taaaatgctg tcagaataaa aagcagtcaa cagaaatgaa     60
acccttataa gagacaaata aatgtgggca attattttct gcaaaatgcc ctccaagccc    120
ctgggcgcca ttgccttctg taataggaca tcacctgaac aggctttctg ggctggagcc    180
aaggaccctc cctgactccc acctcccttt ctgccttgta ccccagccag gtggaagaga    240
ccggagtggt gctgtccctg gagcaaacgg agcaacactc tcgcagaccc attcagcggg    300
gcgcccctc tcagaaggac acccctaacc ctggggacag ccttgacacc cctggcccc     360
ggatccttgc cttcctgcac ccgccttccc tgagcgaggc tgccctggcc gctgaccccc    420
gccgtttctg cagccctgac ctccgtcgcc tcctgggacc catcctggat ggggcttcag    480
tagcagccac tcccagcacc ccgctggcca cacggcaccc ccaaagtcct ctttcggctg    540
atctcccaga tgaactacct gtgggcaccg agaatgtgca cagactcttc acctccggga    600
aagacactga ggcagtggag acagatttag atatagctca ggatgctgat gctctggatt    660
tggagatgct ggccccctac atctccatgg atgatgactt ccagctcaac gccagcgagc    720
agctacccag ggcctaccac agacctctgg gggctgtccc ccggccccgt gctcggagct    780
tccatggcct gtcacctcca gcccttgagc cctccctgct accccgctgg gggagtgacc    840
cccggctgag ctgctccagc ccttccagag gggaccccctc agcatcctct cccatggctg    900
gggctcggaa gaggaccctg gcccagagct caaaggacga ggacgaggga gtggagctgc    960
tgggagtgag acctcccaaa aggtccccca gcccagaaca cgaaaacttt ctgctctttc   1020
ctctcagcct gagtttcctt ctgacaggag g                                  1051
```

```
        <210> 195
        <211> 423
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 195
gtgaactcca agactgtttt gatgttcatg atgcatcttg ggaagagcag atattctggg     60
gatggcataa tgatgtccac atatttgaca caaagacaca gacttggttt caaccagaaa    120
ttaaaggtgg agttccacca cagccacgag ccgcgcatac gtgtgcagtt cttggaaata    180
agggttatat ctttggcgga cgtgttctgc aaactaggat gaatgatttg cactatctaa    240
acctagacac ctggacttgg tctggaagga ttactattaa tggagaaagc ccaaaacatc    300
ggtcatggca tactttaaca cctatagctg atgataaact tttcctatgt ggtggactaa    360
atgcatataa tatgccatta agtgatggtt ggattcataa tgtcacaaca cattgttgga    420
aac                                                                 423
```

<210> 196
<211> 411
<212> DNA
<213> Homo sapiens

<400> 196
ttttttttt ttgaggacaa ggtctcactc tgtcacccca aggtgggagt gcagtgacga   60
catcacagct cactggcagc ctcaaccctg gggttcaagt gatcctctca ccttcagcct   120
ccccaagtag ttgtgcctcc taggcacaca acactatgcc ccggcaaatt tttttgtatt   180
ttgtattttt tgtagaaaca ggatttcgcc atgttggcca ggctggtctc gaacaccctg   240
ggctcaactg atccgcctgc ctcggcctcc caaagtgctg ggattacagg tgtgagccac   300
cctgctcaac caggttttat tatttaagtt agttaaactt tggatagatt gtataatata   360
tagtttaatg taatcatgct catatttttt aaataaataa aacactatac t   411

<210> 197
<211> 751
<212> DNA
<213> Homo sapiens

<400> 197
cccacgggaa gggcaggtga agcaggggct gctgggggat tgctggttcc tgtgtgcctg   60
cgccgcgctg cagaagagca ggcacctcct ggaccaggtc attcctccgg gacagccgag   120
ctgggccgac caggagtacc ggggctcctt cacctgtcgc atttggcagt ttggacgctg   180
ggtggaggtg accacagatg accgcctgcc gtgccttgca gggagactct gtttctcccg   240
ctgccagagg gaggatgtgt tctggctccc cttactggaa aaggtctacg ccaaggtcca   300
tgggtcctac gagcacctgt gggccgggca ggtggcggat gccctggtgg acctgaccgg   360
cggcctggca gaaagatgga acctgaaggg cgtagcagga agcggaggcc agcaggacag   420
gccaggccgc tgggagcaca ggacttgtcg gcagctgctc cacctgaagg accagtgtct   480
gatcagctgc tgcgtgctca gccccagagc aggtgaggca cgtggccagc atgggagggc   540
tgcagccagc gtgccccca ctgccaggcc tcaggcacac tgtagctttt tatgtgactg   600
gctacacagc cctgtcagga ctaagtggga agaagtaagc ttgttctcaa gggtggtgtc   660
ctcagtttgt gaccttcccc tgctgtcctc ttccagaggg acgtggccct tctctcccct   720
gaccagtcct ttccactagt gcgaggcagg g   751

<210> 198
<211> 636
<212> DNA
<213> Homo sapiens

<400> 198
gggccgagtg tctggaggcc tctattgccc gatatgccca ccgtgtcgcc aatagccgtt   60
atacctttga cggtgaaacc gtgacgcttt cgccaagtca gggcgttaac cagctgcacg   120
gcggccggaa agggttcgac aaacgtcgct ggcagattgt gaaccagaac gatcgtcagg   180
tgctgtttgc cctgagttca gatgatggtg atcagggctt cccgggtaat ctcggcgcga   240

86

```
cggtgcaata tcgtctgacc gacgataacc gtatctccat tacttatcgc gccacagttg      300
ataaaccttg cccggtgaat atgactaatc acgtctattt caatcttgac ggcgagcagt      360
ctgacgtgcg caatcacaag ttgcagattc tggcggacga atatctgccg gttgatgaag      420
gcggcattcc gcacgacggc ctgaaatctg tcgccggaac gtcttttgat ttccgcagcg      480
ccaaaatcat cgccagtgag tttcttgccg acgacgatca gcgcaaagtg aaaggttacg      540
atcacgcatt cttgttacag gccaaaggcg atggcaagaa agtggcggcg catgtctggt      600
cagcagatga aaaattgcag ctgaaggtct acacca                                636
```

```
        <210> 199
        <211> 690
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 199
aaagtggcag tgtttcttct gaaattctca ggcagtcaga ctgtcttagg caaatcttga       60
taaaatagcc cttatccagg tttttatcta aggaatccca agaagactgg ggaatggaga      120
gacagtcaag ggttatgtca gaaaaggatg agtatcagtt tcaacatcag ggagcggtgg      180
agctgcttgt cttcaatttt ttgctcatcc ttaccatttt gacaatctgg ttatttaaaa      240
atcatcgatt ccgcttcttg catgaaactg gaggagcaat ggtgtatgac aagccgccga      300
aatttgccat gtcacgagag caaatgtcac agtcatgttc tcacacggca cataatgcaa      360
gtctgttgac agatgcgggt ccattgtcat gtggggagtc gagggcgagc tgtttgtttt      420
tgtaacgatg ttgggaagtg atggctctgc agtcacaaag agcagccttc tctcactggc      480
tgcaccgatg aacattacga agttctagaa caaacatcac ttcaaaatgc ctggagtaat      540
tcctcttata tcaactaatt tcaagaagaa aacctgcaga aactaacccc acccctctca      600
acgagaatat tgtgtccacg tcctctttac ttatacgacc cgtctcttat tctcttataa      660
cacaacgtca taactaaacg agcacaacac                                       690
```

```
        <210> 200
        <211> 433
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 200
gtgactccaa ggaaccaaga ctgcagcagc tgggcctcct ggaggaggaa cagctgagag       60
gccttggatt ccgacagact cgaggataca agagcttagc agggtgtctt ggccatggtc      120
ccctggtgct gcaactcctc tccttcacgc tcttggctgg gctccttgtc caagtgtcca      180
aggtccccag ctccataagt caggaacaat ccaggcaaga cgcgatctac cagaacctga      240
cccagcttaa agctgcagtg ggtgagctct cagagaaatc caagctgcag gagatctacc      300
aggagctgac ccagctgaag gctgcagtgg gtgagcttcc agagaaatct aagctgcagg      360
agatctacca ggagctgacc tggctgaagg ctgcagtggg tgagcttcca gagaaatcta      420
agatgcagga gag                                                        433
```

```
        <210> 201
        <211> 782
```

87

```
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(782)
        <223> n = a,t,c or g




        <400> 201
gaagaagggg aaaagaggct ccaggcccct tctccaatca ctccctgcca ccctttctcc      60
tttggattcc ttggctgctt tagcaggtct tcctagaggc taactttgat ctttcttgct     120
gcagtttctt tttgggagag ctagtcagtc ccacagagtg gtatccctag aagggagaag     180
taaggattgc cctcttcttt aaaatgaaag ccagctattt ttcacgccct ttaactgcag     240
gtctgctcta ttttcttttc tctctctgga gctgagagtc agagggccct tctcctcctc     300
ctttcagccc ccaacactaa gctgatggat tgataaatac ctcagcccct cgcctttctc     360
aacccacctg gcaagtcttc ttaggatctg atcccagttt tctggaagca atcctacccc     420
agcccattct tcccagagtc gagccttaat ccttctcact tctcagtgtc agagcagaaa     480
tgaatcctgg ggttgactgt gtccattcgg gttattagca gctaagaagc ccagacgagt     540
agtgtgagct gccttgggag cctcagtgag ggcactggga ctggcctcac tctcttgccc     600
ccagcctagt gggctttctc ctctgtctct ccggtggccc caggcaatcg actgcatcac     660
gcanggacgt gagttggagc ggccacgtgc ctgcccacca gaggtctacg ccatcatgcc     720
gggctgctgg gcagcggagc cccagcaacg ccacagcatc aaggatgtgc acgcccgctg     780
ca                                                                    782




        <210> 202
        <211> 714
        <212> DNA
        <213> Homo sapiens




        <400> 202
ttcgagaccc tatccatgag gggaattcct cacatgctgg ctttggggcc acagcagctg      60
ctggcccagg atgaggaggg ggacacgctc cttcacctgt ttgcggctcg ggggctgcgc     120
tgggcggcat atgctgcggc tgaggtgctc caggtgtacc ggcgtcttga cattcgtgag     180
cataagggca agaccccct cctggtggcg gctgctgcca accagcccct gattgtggag      240
gatctgttga acctgggagc agagcccaat gccgctgacc atcaggacg ttcggtcttg      300
cacgtggccg ctacctacgg gctcccagga gttctcttgg ctgtgcttaa ctctggggtc     360
caggttgacc tggaagccag agacttcgag ggcctcaccc cgctccacac ggccatcctg     420
gcccttaacg ttgctatgcg cccttccgac ctctgtcccc gggtgctgag cacacaggcc     480
cgagacaggc tggattgtgt ccacatgttg ctgcaaatgg gtgctaatca caccatccag     540
gtgagcgggg atgtgggcgg tcagaccctg ggagattgtg tggaatgggg ccacttggat     600
gtccgggagc tccaggcaaa tgctgacttt gcctcttcct tgctgcgtgc ccttgaacat     660
gttacttcac ttctctgtgc cttaagggtt ttttgcttgt ttctttgtca gtta          714




        <210> 203
        <211> 477
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 203
cggacgcgtg ggcggacgcg tgggtgggga ccaagatggc ggaccttgat tcgcctccga    60
agctgtcagg ggtgcagcag ccgtctgagg gggtgggagg tggccgctgc tccgaaatct   120
ccgctgagct cattcgctcc ctgacagagc tgcaggagct ggaggctgta tacgaacggc   180
tctgcggcga ggagaaagtg gtggagagag agctggatgc tcttttggaa cagcaaaaca   240
ccattgaaag taagatggtc actctccacc gaatgggtcc taatctgcag ctgattgagg   300
gagatgcaaa gcagctggct ggaatgatca cctttacctg caacctggct gagaatgtgt   360
ccagcaaagt tcgtcagctt gacctggcca agaaccgcct ctatcaggcc attcagagag   420
ctgatgacat cttggacctg aagttctgca tggatggagt tcagactgct ttgagga      477
```

```
        <210> 204
        <211> 706
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 204
gcggtggaat tccgggttcc ccgttctggt tcggcatatc tctacagcta tgtcactgtg    60
ggtgaactct gggccttcac cactggctgg aacctcatcc tctcctatgt cattggtaca   120
gccagtgtgg cccgggcctg gagctctgct tttgacaacc tgattgggaa ccacatctct   180
aagactctgc aggggtccat tgcactgcac gtgccccatg tccttgcaga atatccagat   240
ttctttgctt tgggcctcgt gttgctgctc actggattgt tggctctcgg ggctagtgag   300
tcggccctgg ttaccaaagt gttcacaggc gtgaacctt tggttcttgg gttcgtcatg   360
atctctggct tcgttaaggg ggacgtgcac aactggaagc tcacagaaga ggactacgaa   420
ttggccatgg ctgaactcaa tgacacctat agcttgggtc ctctgggctc tggaggattt   480
gtgcctttcg gcttcgaggg aattctccgt ggagcagcga cctgtttcta tgcatttgtt   540
ggtttcgact gtattgctac cactggagaa gaagcccaga atccccagcg ttccatcccg   600
atgggcattg ggatctcact gtctgtctgc ttttttggcgg attttgctgt ctcttctgca   660
ctcaccctga tgatgcctta ctaccagctt cagcctgaga gccctg                  706
```

```
        <210>.205
        <211> 852
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 205
ggcttccatc ctaatacgac tcactatagg gctcgagcgg ccgcccgggc aggtgctggg    60
tcgtttgtgg gcgaagtaag tgctgtagat aaagactttg gccaaatgg agaagtaagg    120
tattcttttg aaatggtgca gccagatttt gagttgcatg ccatcagtgg ggaaattaca   180
aatactcatc agtttgacag ggagtctctt atgaggcgga gagggactgc tgtgtttagc   240
tttacagtca tagcaacaga tcaggggatc cctcagcctc tcaggatca ggccactgta    300
catgtttaca tgaaggatat aaatgataat gctcccaaat ttttaaaaga cttttaccaa   360
gctacaatat cagaatcagc agccaatctg acacaagtgt taagagtatc tgcctcagat   420
gttgatgaag gtaataatgg acttattcac tattctataa taaaaggaaa tgaagaaaga   480.
cagtttgcta tagacagtac ctctggtcag gtaacactaa ttggcaaatt agactatgaa   540
```

```
gcaacacctg cctattccct tgtaattcaa gcagtggatt cagggacaat ccccctcaat     600
tcaacgtgta ctttaaatat tgatatttta gatgaaaatg acaatacccc tttctttccc     660
taaatcaaca cttctttgtt gatgttttgg aaaacatgag aattggtgaa ctcggggcct     720
ctggtactgc aactgattcc cgattcaggt gacattgctg atttatatta caagtttact     780
gggactaaac accccccgg aacttttagc attagcccca aacacttggg agtatttttc     840
ttggcccaaa aa                                                         852
```


```
<210> 206
<211> 361
<212> DNA
<213> Homo sapiens
```


```
<400> 206
ctggtgattg ctatgacctg tatggagggg agaagtttgc cactttggct gagttggtcc      60
agtattacat ggaacatcat gggcaattaa aagagaagaa tggagatgtt attgagctta     120
aaaatcctct gaactgtgca gatcctactt ctcaaaggtg gtttcatgga cacctctctg     180
gaaaagaagc agagaaattg ttaactgaaa aaggaaagca tagtagcttt cttgtacgag     240
agagccagag ccaccctgga gattttgttc tctccgtgtg caccggtgat gacaaaggag     300
agagcaatga cggcaagtct aaagtgactc atgtcatgat tcactgtcag gaactgaaat     360
c                                                                     361
```


```
<210> 207
<211> 2483
<212> DNA
<213> Homo sapiens
```


```
<400> 207
ataaaatgga catagtagta ggacttacct cccagggctg tggttataga ggttttgtaa      60
gaattaaatg acatcatcca tgtaaagcat atagcagaat gcctggcaca tagatgccct     120
tagtgaattt ttgctgttgt tgtgattctt ttgggagcag tcatagtaac atattctcat     180
atgttggtat gttctttcat attgcattgt cttatgaata gattctggaa accaaaatgg     240
aggaaatgat gataagacta agaatgctga gaggaactat ttaaatgttt tacctgggga     300
atttatatt acacggcatt ctaatctctc agaaatccat gttgctttcc atctctgtgt     360
ggatgaccat gtgaaatcgg gaaacatcac tgctcgtgat cctgccatta tgggactccg     420
aaatatactc aaagtttgct gtacccatga catcacaaca ataagcattc ctctcttgct     480
ggtacatgat atgtcagagg aaatgactat accctggtgc ttaaggagag cggaacttgt     540
gttcaagtgt gtcaaaggtt tcatgatgga aatggcttca tgggatggag gaatttctag     600
gacagtgcaa tttctagtac cacagagtat ttctgaagaa atgttttatc aacttagtaa     660
catgcttccc cagatcttcc gagtatcatc aacactcact ctgacatcca agcactaaac     720
ccttatagat tgacatgctg gcagaagatg attgttaaac tctccaggaa cttgtgctat     780
gctgggaatc tgtcaagcaa aagatgccca gaaagagaac ttgcagctca atccacaaat     840
caagatacat gtgtgtgaaa cccattccaa aaatttatat actggcacaa actggtggat     900
caaccoctaa cttaaacact taaagtctct ttatgaattt ctcttttttt cttctctgtg     960
ttacctgtgg aatattaggt aatctaaaac tttttatta ttcacacagg gacacttggg    1020
gggaaaggga aacttgatta tatttacatg ggaggggcatt tgactttttt caaggagggc    1080
ttggacttcg tcttcaggtg gcaatcctta attaaacata caaacaaaat tttcctttta    1140
ctttctttgc caaaacaaaa tgtaaaagca ctgaaatata cattgcaagt acaaatttcc    1200
tgtgaaaatc tttttataga aacacaaatg tataagacaa atgtgcttgt tctttttaaat    1260
```

90

```
tctcctgttt cagaatctct ttttaatcta ctcctaagga tgtacaagtt agagtcagaa    1320
gacgttttgg attttttccc tctctctcat cctcccgctg tgcccttgca cttgcatatt    1380
aataacattt catggactgg gaaatagtgt tctttttttgc aagcttgatg tcaagttagt    1440
ctaaaccagc acctggcagt attttagtgc tcatcaacat tgtgacaatc acacaaggaa    1500
gatcatttct acatttctgt cctccctgcg ttctcagctt gcttaaccat tcctctacct    1560
cttgcatttt tttgcggata aatgtatccc catttctgct tctctgtttc ccctccttttt    1620
ccattgtttt tccttatggt actactttct caggtgctac atatcatata tttgtcccat    1680
ctataacata tttaaatgct ataagtagta actccattaa acaaaggcat ttacaaaagc    1740
acacaggtgt ttagaaaagc aatagtttca tcaattccaa gttatgtgga tattgtaact    1800
ggccacaaga atgaaatgga gggcatttgg tgtcataaga tggcatgtct tgatgacaag    1860
aaacaaaacg cccttcatta atatgcctca gtgtaataac tattatagaa actgttggca    1920
agcagagtgc tttcctataa cagaatgtgt cttaattttc tacttgaggg aaaggtttgt    1980
ccaggtaaca acactaaaga caaccctaag aacacccact ccagcagtat gtccattaga    2040
cactaaaact ctccaaatta tttgtcaggg agcctggcga ttctgccaag aaggcaggtg    2100
ttttgccctt agagcctata cagttctctt ggagaaattg tctttcaggc accactgtta    2160
atcactgaga ctgattctaa tgcaaagcag ggaagacaga ggcagaaacc aggagagtgg    2220
tagatcagtg cagcccagat atcggaatgg aggagcaaag tttcattcac ggatgtttgt    2280
tgaatgctgc tgcccaactc ttcctttgtc acctctaggc tattccacta agttacttat    2340
aaactggtgg ctttaactga gggctgtgta aaggtactat ttggcatgtg aagtcaggat    2400
aaatttatcg aatgtccgtt ttccacatgc aactgtgtta cagaagtagt aaaattggaa    2460
gaatcatgtt tatggtgtta cca                                           2483
```

```
<210> 208
<211> 366
<212> DNA
<213> Homo sapiens
```

```
<400> 208
caagcatcct gcccgccctg ctggtgacca tcctgatctt catggaccag cagatcactg     60
ccgtcattgt caaccggaag gagaacaaac tgaagaaggc tgccggctac catctggacc    120
tgttctgggt gggcatcctc atggctttgt gctcctttat ggggctcccc tggtacgtgg    180
ctgccacggt catctccatc gcccacatcg acagcctcaa gatggagaca gagaccagtg    240
cccctgggga gcagccccag tttctgggag tcagggaaca gagagtaacc ggcatcatcg    300
tcttcatcct gacgggaatc tctgtcttcc tggctcccat cctaaagtgt atccccctgc    360
cggtgc                                                              366
```

```
<210> 209
<211> 574
<212> DNA
<213> Homo sapiens
```

```
<400> 209
cggcgcttca cgcgtagagg caggcagtgc gaatggaatg ctcattgatg gtggtagcca     60
gatagtaaaa gttcaagggc acgctgatgg tacaacgata aataagtctg ctctcaggga    120
cgtagtacaa ggaagtctgg caacgaacac aaccataaat ggtggtcgcc agtatgttga    180
acagagcaca gtagaaacaa caaccattaa aaatggcggt gagcaaagag tatatgagag    240
ccgtgcgctg gacacgacga ttgaaggcgg aactcagtct ctgaatagta agtcaacggc    300
aaaaaatacg catatctatt ctggtggcac gcaaattgtt gataacacca gcacctcgga    360
```

91

```
tgttattgaa  gtttattctg  gtggcgtgct  tgatgttagg  ggtggtacgg  caacaaatgt       420
tacccagcac  gatggtgcaa  tttttaaaaac  taacactaac  ggtacgacgg  tgagcggtac       480
gaatagtgaa  ggtgcattct  ccatccacaa  tcacgtggca  gacaatgtgt  tgctggaaaa       540
cggtggtcat  ttagacataa  acgcatatgg  ttcg                                    574
```

```
<210> 210
<211> 383
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(383)
<223> n = a,t,c or g
```

```
<400> 210
tttttctctt  ccatccagct  gactgatgat  cagggccccg  tcctgatgac  cactgtagcc       60
atgcctgtgt  ttagtaagca  gaacgaaacc  agatcgaagg  gcattcttct  gggagtggtt      120
ggcacagatg  tcccagtgaa  agaacttctg  aagaccatcc  ccaaatacaa  ggtaatgaat      180
gacctaatcc  ctgaaatcaa  agcaacagag  atgcccagag  ccttgttttc  acaaagttca      240
ggcttcaaac  tctactttgg  agcgatgttt  ttgctcacca  ctattacagc  ctgttagctt      300
gtctttatac  catctgcaca  gttatttaaa  aggnnnnnnn  nnnattattt  acaaggactg      360
gctgtttttc  ttatttacct  cct                                                383
```

```
<210> 211
<211> 592
<212> DNA
<213> Homo sapiens
```

```
<400> 211
tttcgtgttc  aggaactggc  accaatgcgt  gttacatgga  ggacatgagc  aacattgacc       60
tggtggaggg  cgacgagggc  aggatgtgca  tcaacacaga  gtggggggcc  ttcggggacg      120
acggggccct  ggaggacatt  cgcactgagt  tcgacaggga  gctggacctc  ggctctctca      180
acccaggaaa  gcaactgttc  gagaagatga  tcagtggcct  gtacctgggg  gagcttgtca      240
ggcttatctt  gctgaagatg  gccaaggctg  gcctcctgtt  tggtggtgag  aaatcttctg      300
ctctccacac  taagggcaag  atcgaaacac  ggcacgtggc  tgccatggag  aagtataaag      360
aaggccttgc  taatacaaga  gagatcctgg  tggacctggg  tctggaaccg  tctgaggctg      420
actgcattgc  cgtccagcat  gtctgtacca  tcgtctcctt  ccgctcggcc  aatctctgtg      480
cagcagctct  ggcggccatc  ctgacacgcc  tccgggagaa  caagaaggtg  gaacggctcc      540
ggaccacagt  gggcatggac  ggcaccctct  acaagataca  ccctcagtac  cc              592
```

```
<210> 212
<211> 2166
<212> DNA
```

<213> Homo sapiens

<400> 212
```
tttcgttgca attgcaacga atggtgttgt gcctgctggt ggctcctact acatgatttc    60
caggtctctg ggcccagagt ttgggggtgc cgtgggcctc tgcttctacc tgggcactac   120
ctttgcagga gccatgtaca tcctgggcac catcgaaatc ctgctggctt acctcttccc   180
agccatggcc atcttcaagg cagaagatgc cagtggggag gcagcagcca tgctgaacaa   240
catgcgtgtt tacggcacct gtgtgctcac ctgcatggcc actgtggtgt tgtgggtgt    300
caagtatgtc aacaagtttg cccttgtctt cctgggttgt gtcatcctct ccatcctggc   360
catctatgct ggggtcatca agtctgcctt cgacccaccc aacttcccga tctgcctcct   420
gggtaaccgc acgctgtctc gccatggctt tgatgtctgt gccaagctgg cttgggaagg   480
aaatgagacg gtgaccacac ggctatgggg ccttttctgc tcctctcgct tcctcaacgc   540
cacctgtgat gaatacttca cccgaaacaa tgtcacagag atccagggca tccctggtgc   600
tgccagtggc ctcatcaaag agaacctctg gagctcctac ctgaccaagg gcgtgattgt   660
ggagaggagt gggatgacct cggtgggcct ggccgatggc actcctatcg acatggacca   720
cccttatgtc ttcagtgata tgacctccta cttcaccctg ctggttggca tctacttccc   780
ctcagtcaca gggatcatgg ctggttctaa ccgctctggg gacctgaggg atgcccagaa   840
gtcaatcccc actggcacca tcctggccat cgccaccacc tctgctgtct acatcagctc   900
cgttgttctg tttggggcct gcattgaggg ggtcgtcctg cgggacaagt ttggcgaagc   960
tgtgaatggc aacctcgtgg tgggcactct ggcctggcca tctccatggg taattgtcat  1020
cggatccttc ttctccacct gtggggctgg gctgcagagc ctcacggggg ccccacgcct  1080
gctgcaggcc atctcgaggg atggcattgt gcccttcctg caggtctttg gccatggcaa  1140
ggccaatgga gagccgacct gggccctgct cctgactgcc tgcatctgcg agattggcat  1200
cctcattgca tccctcgacg aggtggcccc catcctctct atgttcttcc tgatgtgcta  1260
catgtttgtg aatctggcct gtgcagtgca gacgctgctg aggacaccca actggaggcc  1320
acgctttcga tattaccact ggaccctctc cttcctgggc atgagcctct gcctggccct  1380
catgttcatc tgctcctggt attatgcact ggtagccatg ctcattgctg gactcatcta  1440
caagtacatt gagtaccgtg gggcaaagaa ggagtggggc gatgggatac gaggtctgtc  1500
tctcagtgcg gctcgctatg ccctcttacg cctggaggaa gggcccccac acaccaagaa  1560
ctggaggcca cagctgctgg tgctggtgcg tgtggaccaa gaccagaatg tggtgcaccc  1620
ccagctgctc tcactgacct cccagctgaa ggcagggaag ggcctgacca tcgtgggctc  1680
tgtccttgag ggcacctttc tggaaaatca tccacaggcc cagcgggcag aagagtctat  1740
caggcgcctg atggaggcag agaaggtgaa gggcttctgc caggtggtga tctcctccaa  1800
cttgcgtgat ggcgtgtccc atctgatcca gtctggggggc ctcggggggc tgcagcacaa  1860
cactgtgctt gttggctggc cccgcaactg gcgccagaag gaagatcatc agacgtggag  1920
gaacttcatt gagctggtcc gggaaaccac agctggccac ttagccctgc tggtcaccaa  1980
gaacgtttcc atgtttcctg ggaaccctga gcgcttctct gaaggcagca tcgaccgttg  2040
ggggattggg cacgatggag gcatgctcat gctggtgccc ttcctgctgc ggcaccacaa  2100
ggtctggcgg aagtgcaaga tgcgtatctt cactgtggcc cagatggttg acatgcatgc  2160
catgag                                                              2166
```


<210> 213
<211> 392
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = a,t,c or g

<400> 213

93

```
ttctatctga ggctactgtc tttttttctgc tttcaggagc atgagaagag gtgttggagc     60
gttgactttta atttgatgga tcctaaactc ttggcttcag gttctgatga tgcaaaaggt    120
actgtttgaa tctctttctc agcacctcct tctccctggc cctcttaact gtaattcctt    180
tcatcggcag aaatacaaat atttactcaa actcatgtca gtcctttgtg attactgatt    240
attattattc cccannnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    300
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    360
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nn                                   392
```

```
        <210> 214
        <211> 425
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 214
ggcggaattc aaaagcaatg cacaggtctt cctgtgacgg gccgctactc tctctgccct     60
cagtgggacg gtcagccacc catgccctgg tccaggccca gctgatctgc tcaggagcca    120
ggcggggcat gcacgctttt attgtgccaa tccggagtct tcaggaccac acccactgc    180
caggtaagcc cataatgctc cctcaaggaa ccctgccagg aggagagccc aggtggcctc    240
cctgacctgg ggccccagag ggccacagga gtagctaaga catgtctccc ttgggcaggg    300
agcggtccag ttggacagac ttggtgctaa ctggctaggt gaacttgagc aagatttagc    360
atctttctga cctcagcttg ttcacctgca aaataggtac aataatccca gtgtcacagg    420
ctgct                                                                425
```

```
        <210> 215
        <211> 608
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 215
ctgcgggacc ctcatcttgc aggcccgggc ctatgtggga ccgcacgtcc tggcagtggt     60
gacccgcaca gggttctgca cggcaaaagg gggcctggtg agctccatct tgcacccccg    120
gcccatcaac ttcaagttct ataaacacag catgaagttt gtggctgccc tctctgtcct    180
ggctctcctc ggcaccatct acagcatctt catcctctac cgaaaccggg tgcctctgaa    240
tgagattgta atccgggctc tcgacctggt gaccgtggtg gtgccacctg ccctgcctgc    300
tgccatgact gtgtgcacgc tctacgccca gagccgactg cggagacagg gcattttctg    360
catccaccca ctgcgcatca acctgggggg caagctgcag ctggtgtgtt tcgacaagac    420
gggcaccctc actgaggacg gcttagacgt gatgggggtg gtgcccctga aggggcaggc    480
attcctgccc ctggtcccag agcctcgccg cctgcctgtg gggcccctgc tccgagcact    540
ggccacctgc catgccctca gccggctcca ggacaccccc gtgggcgacc ccatggactt    600
gaagatgt                                                             608
```

```
        <210> 216
        <211> 858
        <212> DNA
```

<213> Homo sapiens

<400> 216
ctatctggtc actggccact gtggctttgt attcctctaa cgtggctgcc aaggctgctt   60
ttcctttctg ctcagactca ataattcgct ccatatggtg actgcgttct ttgagtgccc   120
ctatcatttc ttgagcttcc ttattgtctt gttctgccat tttcaaagta ttgcttaaat   180
gctgctggac accaagaagc tgctcccgtt caaaacgggc attctcagcg aggtccatgt   240
aacgttgctc taattccata tagcgcccac ttttacatc ttcatctatg acagattgaa   300
tacttccgct ctcttctaga tgagcatcac atttcttatg tcatagatga agatgtaaaa   360
agtgggcgct atatggaatt agagcaacgt tacatggacc tcgctgagaa tgcccgtttt   420
gaacgggagc agcttcttgg tgtccagcag catttaagca atactttgaa aatggcagaa   480
caagacaata aggaagctca agaaatgata ggggcactca agaacgcag tcaccatatg   540
gagcgaatta ttgagtctga gcagaaagga aaagcagcct ggcagccac gttagaggaa   600
tacaaagcca cagtggccag tgaccagata gagatgaatc gcctgaaggc tcagctggag   660
aatgaaaagc agaaagtggc agagctgtat tctatccata actctggaga caaatctgat   720
attcaggacc tcctggagag tgtcaggctg acaaagaaa agcagagac tttggctagt   780
agcttgcagg aagatctggc tcatacccga aatgatgcca atcgattaca ggatgccatt   840
gctaaaggta gaggatga   858

<210> 217
<211> 399
<212> DNA
<213> Homo sapiens

<400> 217
agcacgctac cgctttaccc tcagcgccag gacgcaggtg ggctctgggg aagccgtcac   60
agaggagtca ccagcacccc cgaatgaagc tactccaacc gcagctcctc ccacattgcc   120
cccgactacc gtgggtgcga cgggcgctgt gagcagtacc gatgctactg ccattgctgc   180
caccaccgaa gccacaacag tccccatcat cccaactgtc gcacctacca ccatggccac   240
caccaccacc gtcgccacaa ctactacaac cactgctgcc gccaccacca ccacggagag   300
tcctcccacc accacctccg ggactaagat acacgaatcc gccctgatg agcagtccat   360
atggaacgtc acggtgctcc ccaacagtaa atgggccaa   399

<210> 218
<211> 662
<212> DNA
<213> Homo sapiens

<400> 218
ctgaagtcaa cgcaagacga aatcaaccag gcaaggagca aactgtccca gctgcatgaa   60
agccgccagg aggcccacag gagcctggag cagtatgacc aggtgctcga tggagcccat   120
ggtgccagcc tgaccgacct ggccaacctg agcgaaggcg tctccctggc agagagggg   180
agttttggag ccatggatga tccttcaaa aataaagcct tgttatttag caacaacacg   240
caagagttgc atccggatcc tttccagaca gaagacccct tcaaatctga cccatttaaa   300

95

```
ggagctgacc ccttcaaagg cgaccgttc cagaatgacc cctttgcaga acagcagaca      360
acttcaacag atccatttgg aggggaccct ttcaaagaaa gtgacccatt ccgtggctct      420
gccactgacg acttcttcaa gaaacagaca aagaatgacc catttacctc ggatccattc      480
acgaaaaacc cttccttacc ttcgaagctc gacccctttg aatccagtga tcccttttca      540
tcctccagtg tctcctcaaa aggatcagat ccctttggaa ccttagatcc cttcggaagt      600
gggtccttca atagtgctga aggctttgcc gacttcagca ctattgaagg tcgacgcggc      660
cg                                                                     662
```

```
        <210> 219
        <211> 752
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 219
    cggacgcgtg ggggatctgg caatagctcc caaccctcac ttcgtgaggg ccacgacaaa       60
    cctgttttta atggagctgg aaagcctcat tccagcacct cttcaccaag tgtcccaaag      120
    acttctgcta gcaggactca gaaatctgct gttgagcaca aagccaaaaa atctctgtcc      180
    catcctagcc attccaggcc tgggcccatg gtcaccccac acaataaggc taagagtcca      240
    ggtgtcaggc agccaggcag cagctctagc tcagcccctg ggcagcccag cacaggggtt      300
    gctcgaccca cagttagttc tggccctgtg cctaggcgcc agaatggcag ctccagctca      360
    ggacctgagc gatcaatcag tgggtccaag aagccaacca atgactcaaa tccctctagg      420
    cggacagtca gtggtacatg tggccctgga caacctgcaa gcagctcagg tggccctggg      480
    cgacccatca gtggttcagt tagttctgca agacccttgg gcagctctcg tggccctggc      540
    cggcctgtga gcagtccaca tgaacttcga cgaccagtga gtggcttggg cccccccgggg      600
    cggtctgtca gtggccctgg gagatccata agtggctcaa ttccagctgg acggactgtc      660
    agtaattcag tcccaggaag accagtgagc agcttgggac ctgggcaaac agttagtagc      720
    tcaggtccca ctataaagcc taagtgcact gt                                    752
```

```
        <210> 220
        <211> 582
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 220
    ttattattat tttgcataga gacaagcact cactgtgtta cccaggctgg ttttgaactc       60
    ctgagcttaa tcagttctca cctgctttgc cctcccaaag tgctatgatt acaggtgtga      120
    gccaccacgc ttggccctgc ccaggagtca tttttgtatc tacaggtatc ttcctatgct      180
    gtagacagat gccctttttc aaggcaaaaa ccctagccat tttttctcttc tccttcagag      240
    tctgcaacat cctctcaact catccaagtg actactgcct ggtgctcttg gggatgcagg      300
    gaggcctgag aaggccaatg tctatacaga aagttctaac atagtgcact gagtcaatgt      360
    gggcacttta aagccctttc acctgccaag tcacgaagca cccctatagt tgtgtttgta      420
    aaatactggg gggtttgaag gggaaaaggg ataactccaa ggtaccatct ttgcatttca      480
    gatccacaca acttaaagat ctgctgtcga gtgaatgggg aagtggtcca gagcagcaac      540
    accaaccaga tggtattcaa gacagaggac ctgatagcct gg                         582
```

```
<210> 221
<211> 440
<212> DNA
<213> Homo sapiens




<400> 221
ggaattcgat cagtagaagt ttgggggata tagaaacgaa ggttttctaa cttttagctt      60
tcaaggagat tgtccggttg ggaaagcaag atatgaaaaa taaatatgtc aagaatataa     120
tccaaaacaa tctaattaag tgctagaagt ttgccatgga cagacaaagt gctacttggg     180
aaggaagttc cagaaacacc acagctgggt acattcttca ccactctgag tggtggcagt     240
gacgcgttgg ctttgtgaga atggtgtgtc ttacttgaga aagtgtgtgt gttctgcctg     300
caggcatggg actcgctgtg ctggagaagt ggcagccgct gcaaacaatt cgcactgcac     360
agtcggaatt gctttcaacg ccaagatcgg aggtatggga aaccaactca cgtggatgta     420
gaaatgcgcc agttagctct                                                 440




<210> 222
<211> 489
<212> DNA
<213> Homo sapiens




<400> 222
ccgacgattt cgtgaggcgg cagccaggtg gggttccagc cagagcacgc acgcacggag      60
ccgggagcat gcagcctgca ctgcggggga tgtgatgctc ggctctaact cgcctggctg     120
gcccgccacg gacgcctcag cttgcaacca tggtaacgtt tctggcgggg gacacccccg     180
ggagcccacc gcgatgggca gcctcctggt gactgatgga cgagtgtcca cctcccagac     240
cgagagcgct tagtaggtcg gaggaagtgg agaggatgta acacgccccc agccgggagt     300
gaagccctga ggagctcctc ccccccttcgt tcccaccctc aagtctgacg atgcacacctc     360
caattttgat gaaccaaaga agaattcgtg ggtttcatcc tctccgtgcc agctgagccc     420
ctcaggcttc tcgggtgaag aactgccgtt tgtggggttt tcgtacagca aggcactggg     480
gattcttgg                                                             489




<210> 223
<211> 493
<212> DNA
<213> Homo sapiens




<400> 223
tttcgtcgag cgccttgcgc acctccacgc tgcctgcgcc ccgcgccgca aggtggcgct      60
cctcttggag gtgtgcagag atgtctatgc gggcctggct cgaggcgaga accaagatcc     120
cctgggggcc gacgccttcc tgccggcgct gaccgaggaa ctcatctgga gcccggacat     180
tggggacacg cagctggacg tagagtttct tatggagctc ttagatccag atgagctgcg     240
gggagaggct gggtactacc tgaccacgtg gtttggggcg ctgcaccaca ttgcccacta     300
ccagcccgaa acagaccgcg ctccccgggg gctcagctcc gaggcccgcg cctccctgca     360
```

```
ccagtggcac cgcaggcgga cgctgcacag aaaggatcat cccagagccc aacagctgga    420
ctgaccctgg ctggtcgaag agccctggcc agatgtcctg tggacagacc caatttctgg    480
cctcgtctgc tgg                                                        493
```

<210> 224
<211> 883
<212> DNA
<213> Homo sapiens

<400> 224
```
agtgacctgg aaacaagttc tgatccagaa ggtgaggatt gggatgagga agctgaggat     60
gatggttttg atagtgatag ctcactgtca gactcagacc ttgaacaaga ccctgaaggg    120
cttcaccttt ggaactcttt ctgcagtgta gatccttata atccccagaa ctttacagca    180
acaattcaga ctgctgccag aattgttcct gaagagcctt ctgattcaga gaaggatttg    240
tctggcaagt ctgatctaga gaattcctcc cagtctggaa gccttcctga gaccccctgag   300
catagttctg gggaggaaga tgactgggaa tctagtgcag atgaagcaga gagtcttcaa    360
actgtgggaa cttcattctg ttaattctgg atggacccct acaacccttt aaattttaag    420
gctccttttc aaacatcagg ggaaaatgag aaaggctgtc gtgactcaaa gaccccatct    480
gagtccattg tggccatttc tgagtgtcac accttacttt cttgtaaggt gcagctgttg    540
gggagccaag aaagtgaatg tccagactcg gtacagcgtg acgttctttc tggaggaaga    600
cacacacatg tcaaaagaaa aaaggtaacc ttccttgaag aagttactga gtattatata    660
agtggtgatg aggatcgcaa aggaccatgg gaagaatttg caagggatgg atgcaggttc    720
cagaaacgaa ttcaagaaac agaagatgct attggatatt gcttgacatt tgaacacaga    780
gaaagaatgt ttaatagact ccagggaaca tgcttcaaag gacttaatgt tctcaagcaa     840
tgttgagttg gcagcctgta gtcctagcta gcatacacta cct                      883
```

<210> 225
<211> 389
<212> DNA
<213> Homo sapiens

<400> 225
```
cggccgcgtc tacggcatat tctttttttg gaactgtgga gaatatggct ccaaaagtgg     60
ttaatcgtcc aggtcatact cagagtgctg actgggggtc tttggggggg ttaatgggaa    120
ggtttgaatt tgggattttt ttaaagggga aggagattgt taagtgagga tcaacaggga    180
atggtaaaga aactgggggt tttattttct ttattttatg ccctatgtaa taaataacca    240
aaaaacatta ttgcgtgcag tataaaagga ctatgaaatc tgttagctgc gtctatctca    300
tcctaatttg aaagggcaaa aaaaaatatt accatagatt tcctgctaat agtaacaatc    360
taaagcatta atggtgttgg gtcttttgg                                       389
```

<210> 226
<211> 412
<212> DNA
<213> Homo sapiens

```
        <400> 226
gggtttgttt ttcttccagg ccccatgtct gtgggtttgg acttctctct gccaggcatg      60
gagcatgtct atgggatccc tgagcatgca gacaacctga ggctgaaggt cactgagtga     120
gtcctatggt gacatcagga agatggaggt gggcaggaag gagtcaggcc tttagggaga     180
tgggtgtgca tattggatac tctaggcaag catgggtcat ttcttgtgtc cagaatcacc     240
tttggtgata gaaaattttt tgagaaagga caagaggagc ctttgcttat ctctcacctg ·    300
tgtctgtgga gtggtgttag catataacgc·agcctggggc cagttagcag cccaagtctg      360
tctgtttgcc tgcaggggtg gggagccata tcgcctctac aatttggatg tg              412
```


```
        <210> 227
        <211> 390
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 227
gggagtgagt gccagggcac tgacctggac acccgcaact gtaccagtga cctctgtgta      60
cacactgctt ctggccctga ggacgtggcc ctctatgtgg gcctcatcgc cgtggccgtc     120
tgcctggtcc tgctgctgct tgtcctcatc ctcgtttatt gccggaagaa ggaggggctg     180
gactcagatg tggctgactc gtccattctc acctcaggct tccagcccgt cagcatcaag     240
cccagcaaag cagacaaccc ccatctgctc accatccagc cggacctcag caccaccacc     300
accacctacc agggcagtct ctgtccccgg caggatgggc ccagccccaa gttccagctc     360
accaatgggc acctgctcag ccccctgggt                                      390
```


```
        <210> 228
        <211> 777
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 228
cttatttata atgaagatat gatttgttgg attgaatcaa gagaatcttc aaatcaactc      60
aaatgtatcc agataacaaa agcaggagga ttaacagatg aatggacaat caatattctt     120
caatccttcc acaatgtgca acaaatggcg attgactggc tcactcgaaa tctctatttt      180
gtggaccatg tcggtgaccg gatctttgtt tgtaattcca acggttctgt atgtgtcacc     240
ctgattgatc tggagcttca caatcctaaa gcaatagcag tagatccaat agcaggaaaa     300
ctttttcttta ctgactacgg gaatgtcgcc aaagtggaga gatgtgacat ggatgggatg     360
aaccgaacaa ggataattga ttcaaagaca gagcagccag ctgcactggc actagaccta     420
gtcaacaaat tggtttactg ggtagatctt tacttggact atgtgggagt agtggactat     480
caaggaaaaa atagacacgc tgtcattcaa ggcagacaag tcagacatct ttatggtata     540·
actgtgtttg aagattattt gtatgcaacc aattctgata gctacaatat cgtaaggata     600
agccgattta atgggactga tattcactca ttaattaaaa ttgagaatgc ttggggaatc     660
cgaatttatc aaaaaagaac tcaaccaaca gtcagaagcc atgcatgtga agtcgatcca     720
tatggaatgc caggggctg ttcacacatc tgtctactca gcagcagtta cacgaaa         777
```

```
<210> 229
<211> 486
<212> DNA
<213> Homo sapiens
```

```
<400> 229
tttcgtctgg gaacccgcag cctgggggact cctccggcgg gggcgctggg ggcgggctgc      60
cgtcccctgg ggagcaggag ctgagccggc gcttgcagcg cctgtatccc gcggtcaacc     120
agcaagagac tccgctgccg cgctcctgga gccccaagga caaatacaac tacattggtc     180
tctcccaggg caacctccgc gtccactaca aaggtcatgg caaaaatcac aaagatgcgg     240
cctcagtgcg tgccacccac cccatacctg ctgcctgtgg catttattac tttgaagtga     300
agattgtcag caaaggaaga gatggttaca tgggaatagg actctcggct caaggcgtca     360
acatgaacag acttcctggt tgggacaaac attcctatgg ttaccatggt gatgatgggc     420
attcgttctg ctcctcgggg actggccagc cctatggtcc cacattcacc acaggagacg     480
tgatcg                                                                  486
```

```
<210> 230
<211> 396
<212> DNA
<213> Homo sapiens
```

```
<400> 230
tttttttttt ttaagatggg gtctcgctct gtcacccagg ctggagtgca gtggtgtgat      60
gtcagctcac tgcaagctcc gcctcccagg ttcacactat tctgcctcag cctcccaagt     120
agctgggact acaggtgcgt gccaccatgc ccggctaatt tttttgtatt tttagtagag     180
acggggtttc accgtgttag ccagtatggt cttgatctcc tgacctcgtg atccacctgc     240
ctcggcctcc caaaagtgct gggattacag gtgtgagctg ctgcgcctgg cttatgagtc     300
gtatgttctg atcctccctc ttgaagttgc cttctgtggt ctaaggaggg cctgaaggtt     360
caggtaaaaa cttcagggtg accttcactg ggggtg                                396
```

```
<210> 231
<211> 713
<212> DNA
<213> Homo sapiens
```

```
<400> 231
tcagctcagc ttggcacgag gaaaggtgtt cttgtgtgcc ttgtcttttg tttactttgc      60
caaagcattg gcagaaggct atctgaagag caccatcact cagatagaga gaagggttga     120
tatcccttct tcactggtgg gagttattga tggtagtttt gaaattggga atctcttagt     180
tataacattt gttagctact ttggagccaa acttcacagg ccaaaaataa ttggagcagg     240
```

```
gtgtgtaatc atgggagttg gaacactgct cattgcaatg cctcagttct tcatggagca   300
gtacaaatat gagagatatt ctccttcctc caattccact ctcagcatct ctccgtgtct   360
cctagagtca agcagtcaat taccagtttc agttatggaa aaatcaaaat ccaaaataag   420
taacgaatgt gaagtggaca ctagctcttc catgtggatt tatgttttcc tgggcaatct   480
tcttcgtgga ataggagaaa ctcccattca gcctttgggc attgcctacc tggatgattt   540
tgccagtgaa gacaatgcag ctttctatat tgggtgtgtg cagacggttg caattatagg   600
accaatcttt ggtttcctgt taggctcatt atgtgccaaa ctatatgttg acattggctt   660
tgtaaaccta gtcattttta ggtggaagca tgttacagca cattatcgag gaa           713
```

```
        <210> 232
        <211> 1067
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 232
cagccttcca aggtagggca caccaaggcc taaggaatca gaaagggccc gagggtgggc    60
tgtgtcctgg ctttcaggcc ctggggcgac caccagcctc tgctcactct gaggctccag   120
ccagggcgcc aagcctcagg accgtgggtg gggcccaagg acactctgga cccccgttcc   180
attcatgaga ggccctcagc acgccacgtg tctgctgtga cagcccgcag ggagggtgga   240
agccttctgt aaattccaca tgtgggccga gggcatgacg tccttgatga aggccgcgct   300
ggacctcacc taccccatca cgtccatgtt ctccggagcc ggcttcaaca gcagcatctt   360
cagcgtcttc aaggaccagc agatcgagga cctgtggatt ccttatttcg ccatcaccac   420
cgacatcaca gcctcggcca tgcgggtcca caccgacggc tccctgtggc ggtacgtgcg   480
tgccagcatg tccctgtccg gttacatgcc ccctctctgt gacccgaagg acggacacct   540
gctgatggac gggggctaca tcaacaacct cccagcggat gtggcccggt ccatgggggc   600
aaaagtggtg atcgccattg acgtgggcag ccgagatgag acggacctca ccaactatgg   660
ggatgcgctg tctgggtggt ggctgctgtg gaaacgctgg aaccctttgg ccacgaaagt   720
caaggtgttg aacatggcag agattcagac gcgcctggcc tacgtgtgtt gcgtgcggca   780
gctggaggtg gtgaagagca gtgactactg cgagtacctg cgccccccca tcgacagcta   840
cagcaccctg gacttcggca gttcaacga gatctgcgaa gtgggctacc agcacgggcg    900
cacggtgttt gacatctggg gccgcagcgg cgtgctggag aagatgctcc gcgaccagca   960
ggggccgagc aagaagcccg cgagtgcggt cctcacctgt cccaacgcct ccttcacgga  1020
ccttgccgaa attgtgtctc gcattgagcc cgccaagccc gccatgg                1067
```

```
        <210> 233
        <211> 704
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 233
tttcgtgtga gggagagccg agggaaccag cgcggtgcct agcggaactc caggctgga    60
atcccgagac acaagtgcat ctgctagctg ttagcacttg cagacggag ttctcctcta   120
gggtagttct aactttgggt aataatgttt gtcagctacc tgatattaac attgctccac   180
gttcaaacag cagtgttagc aagacctggg ggagagagca ttggctgtga tgactactta   240
ggctccgaca aagtcgtgga caaatgtggg gtgtgtggag agacaacac gggctgtcag   300
gttgtgtcgg gcgtgtttaa gcatgccctc accagcctgg gctaccaccg cgtcgtggag   360
attcccgagg gagccacgaa aatcaacatc acggagatgt acaagagcaa caactatttg   420
gccctgagaa gtcgttctgg acgctccatc atcaatggga ctgggcaat tgatcgacca   480
```

```
ggaaaatacg agggcggagg gaccatgttc acctacaagc gtccaaatga gatttcgagc    540
actgccggag agtccttttt ggcggaaggt cccaccaacg agatcttgga tgtctacgtg    600
agtttggatg tttctggact gttctttgga ttttgaatct tgtcacttct aaggaacata    660
ctctgaacaa ataagcaaca aatcattgcc catactcaat aaaa                     704
```

```
        <210> 234
        <211> 420
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 234
atttcaggag ggaccagaag cgcaggcccg ctcaggagga attacaactt catcgccgcg     60
gtggtggaga aggtggcgcc atcggtggtt cacgtgcagc tgtggggcag gaaccagcag    120
tggattgagg tggtgctcca gaatggggcc cgttatgaag ctgttgtcaa ggatattgac    180
cttaaattgg atcttgcggt gattaagatt gaatcaaatg ctgaacttcc tgtactgatg    240
ctgggaagat catctgacct tcgggctgga gagtttgtgg tggctttggg cagcccattt    300
tctctgcaga acacagctac tgcaggaatt gtcagcacca aacagcgagg gggcaaagaa    360
ctggggatga aggattcaga tatggactac gtccagattg atgccacaat taactatggg    420
```

```
        <210> 235
        <211> 1057
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 235
cccacgcgtc cgagaactca aagaaattct ggataggaaa gggcatttct cagagaatga     60
gacaaggtgg atcattcaaa gtctcgcatc agctatagca tatcttcaca ataatgatat    120
tgtacataga gatctgaaac tggaaaatat aatggttaaa agcagtctta ttgatgataa    180
caatgaaata aacttaaaca taaaggtgac tgattttggc ttagcggtga agaagcaaag    240
taggagtgaa gccatgctgc aggccacatg tgggactcct atctatatgg cccctgaagt    300
tatcagtgcc cacgactata gccagcagtg tgacatttgg agcataggcg tcgtaatgta    360
catgttatta cgtggagaac cacccttttt ggcaagctca gaagagaagc ttttttgagtt    420
aataagaaaa ggagaactac attttgaaaa tgcagtctgg aattccataa gtgactgtgc    480
taaaagtgtt ttgaaacaac ttatgaaagt agatcctgct cacagaatca cagctaagga    540
actactagat aaccagtggt taacaggcaa taaactttct tcggtgagac caaccaatgt    600
attagagatg atgaaggaat ggaaaaataa cccagaaagt gttgaggaaa acacaacaga    660
agagaagaat aagccgtcca ctgaagaaaa gttgaaaagt taccaacccct ggggaaatgt    720
ccctgagacc aattacactt cagatgaaga ggaggaaaaa caggtaggaa gaatcattgc    780
tgcatttctc ccaagtgtaa aataccctca ccacacctgg aacattttt tgcaaatctg    840
tctttttgtt gttagtttgt aacaaaggcc gagcgttata tagcaagtaa agttctttct    900
gccttataag gctagcatga tttagcgagg tggcctacat gtttatttta aggttggtga    960
ttatgtaggg caggtgtctg caaactttt ctgtaaggga acaaacagta aatattttag    1020
gctttgtggg ccctagtagt ctttgtcaca actactc                            1057
```

```
      <210> 236
      <211> 467
      <212> DNA
      <213> Homo sapiens




         <400> 236
ttgagtatta gtgtcagtga tgtgtctctc tctgatgaag gacagtacac ctgttcttta        60
tttacaatgc ctgtcaaaac ttccaaggca tatctcaccg ttctgggtgt tcctgaaaag       120
cctcagatta gtggattctc atcaccagtt atggagggtg acttgatgca gctgacttgc       180
aaaacatctg gtagtaaacc tgcagctgat ataagatggt tcaaaaatga caaagagatt       240
aaagatgtaa aatatttaaa agaagaggat gcaaatcgca agacattcac tgtcagcagc       300
acactggact tccgagtgga ccggagtgat gatggagtgg cggtcatctg cagagtagat       360
cacgaatccc tcaatgccac ccctcaggta gccatgcagg tgctagaaat gcactataca       420
ccatcagtta agattatacc atcgactcct tttccacaag aaggacg                     467




      <210> 237
      <211> 416
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(416)
      <223> n = a,t,c or g




         <400> 237
ggtacaacca gaaagtggat ctcttcagcc tgggaattat cttctttgag atgtcctatc        60
accccatggt cacggcttca gaaaggatct ttgttctcaa ccaactcaga gatcccactt       120
cgcctaagtt tccagaagac tttgacgatg gagagcatgc aaagcagaaa tcagtcatct       180
cctggctgtt gaaccacgat ccagcaaaac ggcccacagc cacagaactg ctcaagagtg       240
agctgctgcc cccaccccag atggaggagt cagagctgca tgaagtgctg caccacacgc       300
tgaccaacgt ggatggaaag gcctaccgca ccattgatgg gcccagatct tttcggcagc       360
gcatctcccc tgccatcgnt ttacacctat gaccagcgac atattgaagg gcaact         416




      <210> 238
      <211> 739
      <212> DNA
      <213> Homo sapiens




         <400> 238
ggaccaggac tacaagtacg acagtacctc agacgacagc aacttcctca accccccag         60
ggggtgggac catacagccc caggccaccg gacttttgaa accaaagatc agccagaata       120
tgattccaca gatggcgagg gtgactggag tctctggtct gtctgcagcg tcacctgcgg       180
gaacggcaac cagaaacgga cccggtcttg tggctacgcg tgcactgcaa cagaatcgag       240
```

```
gacctgtgac  cgtccaaact  gcccaggaat  tgaagacact  tttaggacag  ctgccaccga     300
agtgagtctg  cttgcgggaa  gcgaggagtt  taatgccacc  aaactgtttg  aagttgacac     360
agacagctgt  gagcgctgga  tgagctgcaa  aagcgagttc  ttaaagaagt  acatgcacaa     420
ggtgatgaat  gacctgccca  gctgcccctg  ctcctacccc  actgaggtgg  cctacagcac     480
ggccgacatc  ttcgaccgca  tcaagcgcaa  ggacttccgc  tggaaggacg  ccagcgggcc     540
caaggagaag  ctggagatct  acaagcccac  tgcccggtac  tgcatccgct  ccatgctgtc     600
cctggagagc  accacgctgg  cggcacagca  ctgctgctac  ggcgacaaca  tgcagctcat     660
caccaggggc  aagggggcgg  gcacgcccaa  cctcatcagc  accgagttct  ccgcggagct     720
ccactacaag  gtggacgtc                                                      739
```

```
            <210> 239
            <211> 611
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 239
ggaatcggaa  gaaaatggag  agagtgcaat  ggacagcaca  gtggccaaag  aaggcactaa      60
tgtaccatta  gttgctgctg  gtccttgtga  tgatgaaggc  attgtgacta  gcacaggcgc     120
aaaagaggaa  gacgaggaag  gggaggatgt  tgtgactagt  actggaagag  gaaatgaaat     180
tgggcatgct  tcaacttgta  cagggttagg  agaagaaagt  gaaggggtct  tgatttgtga     240
aagtgcagaa  ggggacagtc  agattggtac  tgtggtagag  catgtggaag  ctgaggctgg     300
agctgccatc  atgaatgcaa  atgaaaataa  tgttgacagc  atgagtggca  cagagaaagg     360
aagtaaagac  acagatatct  gctccagtgc  aaaagggatt  gtagaaagca  gtgtgaccag     420
tgcagtctca  ggaaaggatg  aagtgacacc  agttccagga  ggttgtgagg  gtcctatgac     480
tagtgctgca  tctgatcaaa  gtgacagtca  gctcgaaaaa  gttgaagata  ccactatttc     540
cactggcctg  gtcgggggta  gttacgatgt  tcttgtatct  ggtgaagtcc  cagaatgtga     600
agttgctcac  a                                                             611
```

```
            <210> 240
            <211> 1090
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 240
tttttttttt  ttaagcttga  aataaaattt  ttattttgtt  ttgaattaaa  tcaaccatga      60
ttattcacag  tgcagtaagt  gtgtatcatc  tgtttgatat  tttcatatta  cagttttgat     120
agtgctcttc  agtctgcgaa  atcttctttg  ggtggaaatg  atgaactgtc  agctactttc     180
ttagaaatga  aaggacattt  ctatatgtat  gctggttctc  tgctcttgaa  gatgggtcag     240
catggtaata  atgttcaatg  gcgagctctt  tctgagctgg  ctgcgttgtg  ctatctcata     300
gcatttcagg  taagtcttcc  acttggagca  attgacattt  cacggagtct  tgatgtgttt     360
taaatgaagg  tgtgctctgg  tatgtaatga  caatatgtga  acaaacctgt  ggaattaaag     420
ttaaaatgaa  atagtcaatt  tgatacagtg  gaaaataact  aagcatacac  aatactggtg     480
aggctggtga  aacaggatg   ttgaatgcac  tcttgtcgaa  agcctgcatt  gccatgattt     540
gtttgtagac  aaatttgaag  agtttgatct  ttttactctg  ccatttttgg  aacatgata      600
aagatgtaat  ctcgtattat  gggtaaagct  tgattcaaaa  agatgtgtta  cttggacaaa     660
atcctaataa  gtagacgtag  ggcaatggct  ttatagccta  tgatagaaga  atatgattgc     720
aatttaacat  gttaattgaa  acacatgtat  ataacattta  tgactgtatt  gtgtatatgt     780
aacagtatat  ctattaatct  ttgaaaacat  aaaacctttt  cttatttttt  atttttttat     840
```

104

```
tttttttttga gaccaagtct ctctctgtcg ccaggctgga gtgcagtggt gtgatctcgg      900
ctcactgcag cctccacctc ctgggttcga gtgattctcc tgcctcagcc tcccgagtag      960
ctgggactac aggcccatgc taccaagccc agctaatttt ttgtattttt aatagagatg     1020
gggtttcacc atgttggcca ggatggtcgc aatctcttga cctcttgatc tacctgcctt     1080
ggtctcccaa                                                            1090
```

```
            <210> 241
            <211> 680
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 241
            gcaacaccca tcccaggaaa agccacaagt cctgaccccc agccccagga agcagaagct      60
            gaacagaaag tacaggtccc accatgacca gatgatctgc aagtgcctct ccctgagcat     120
            atcctactcc gctaccattg gcggcctgac caccatcatc ggcacctcca ccagcctcat     180
            cttcctggaa cacttcaaca accagtatcc agcctcagag gtggtgaact ttggcacctg     240
            gttcctcttc agcttcccca tatccctcat catgctggtg gtcagctggt ctggatgca     300
            ctggctgttc ctgggctgca attttaaaga gacctgctct ctgagcaaga agaagaagac     360
            caaaagggaa cagttgtcag agaagaggat ccaagaagaa tatgaaaaac tgggagacat     420
            tagctaccca gaaatggtga ctggattttt cttcatcctg atgaccgtac tgtggtttac     480
            ccgggagcct ggctttgtcc ctggctggga ttctttcttt gaaaagaaag gctaccgtac     540
            tgatgccaca gtctctgtct tccttggctt cctcctcttc ctcattccag cgaagaagcc     600
            ctgctttggg aaaaagaatg atggagagaa ccaggagcac tcactgggga ccgagcccat     660
            catcacgtgg aaggacttcc                                                 680
```

```
            <210> 242
            <211> 491
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 242
            cttgaaagag aaggggacaa aggaacacca gtattaagag gattttccag tgtttctggc      60
            agttggtcca gaaggatgcc tccattcctg cttctcacct gcctcttcat cacaggcacc     120
            tccgtgtcac ccgtggccct agatccttgt tctgcttaca tcagcctgaa tgagccctgg     180
            aggaacactg accaccagtt ggatgagtct caaggtcctc ctctatgtga caaccatgtg     240
            aatggggagt ggtaccactt cacgggcatg gcgggagatg ccatgcctac cttctgcata     300
            ccagaaaacc actgtggaac ccacgcacct gtctggctca atggcagcca cccctagaa      360
            ggcgacggca ttgtgcaacg ccaggcttgt gccagcttca atgggaactg ctgtctctgg     420
            aacaccacgg tggaagtcaa`ggcttgccct ggaggctact atgtgtatcg tctgaccaag     480
            cccagcgttt g                                                          491
```

```
            <210> 243
            <211> 983
            <212> DNA
```

<213> Homo sapiens

<400> 243
```
tgcggccgca ccatgagcga catccgccac tcgctgctgc gccgcgatgc gctgagcgcc      60
gccaaggagg tgttgtacca cctggacatc tacttcagca gccagctgca gagcgcgccg     120
ctgcccatcg tggacaaggg ccccgtggag ctgctggagg agttcgtgtt ccaggtgccc     180
aaggagcgca gcgcgcagcc caagagactg aattcccttc aggagcttca acttcttgaa     240
atcatgtgca attatttcca ggagcaaacc aaggactctg ttcggcagat tattttttca     300
tcccttttca gccctcaagg gaacaaagcc gatgacagcc ggatgagctt gttgggaaaa     360
ctggtctcca tggcggtggc tgtgtgtcga atcccggtgt tggagtgtgc tgcctcctgg     420
cttcagcgga cgcccgtggt ttactgtgtg aggttagcca aggcccttgt agatgactac     480
tgctgtttgg tgccgggatc cattcagacg ctgaagcaga tattcagtgc cagcccgaga     540
ttctgctgcc agttcatcac ctccgttacc gcgctctatg acctgtcatc agatgacctc     600
attccaccta tggacttgct tgaaatgatt gtcacctgga ttttgagga cccaaggttg     660
attctcatca cttttttaaa tactccgatt gcggccaatc tgccaatagg attcttagag     720
ctcacccccgc tcgttggatt gatccgctgg tgcgtgaagg caccccctggc ttataaaagg     780
aaaaagaagc ccccccttatc caatggccat gtcagcaaca aggtcacaaa ggacccgggc     840
gtggggatgg acagagactc ccacctcttg tactcaaaac tccacctcag cgtcctgcaa     900
gtgctcatga cgctgcagct gcacctgacc gagaagaatc tgtatgggcc gcctggggct     960
gatcctcttc gaccacatgg tcc                                             983
```


<210> 244
<211> 526
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(526)
<223> n = a,t,c or g

<400> 244
```
cggctcgtcc nnatttgaac cccttctttg atcggcctgc agtaccgggc cggaattacc      60
cggtcgagcc acgcgttcgc tcacgcgtcc ggccaaccag aagggttgcg acggggaccg     120
cctgtactac gacggctgtg ccatgatcgc catgaacgga agcgtctttg ctcaaggatc     180
ccagttttct ctggatgacg tggaagtcct gacggccacg ctggatctgg aggacgtccg     240
gagctacagg gcggagattt catctcgaaa cctggcggtg agtgctccag tagacacctg     300
tgtgggatgc tcatcaaaga cgtggaaagt ggccccattc gtgcgggcct ggtggaggcc     360
gtgagggtgc agtgcctgaa aagtctgaca gggaagttcc ggacttcccg agcgtggaaa     420
ggggctggtg ccgcagacag aacctgcttc catctgttcc ccgtcatcct ctgcttgggc     480
caggccctga gctggggtga gctggggaca ggcaggcagg tgtatt                    526
```


<210> 245
<211> 418
<212> DNA
<213> Homo sapiens

                                106

```
        <400> 245
gggcggggcc cccaggtag gcatggctgc tgcccccagc ccatttcttt tgaatctgtt      60
cactcctatt cactcctact tgccactcct tctattcatt actcactgcc cctgccccta     120
gtccccatgg taccctgag ccatgggcat ttcctgagcc ccactcagca ggctctgctt      180
cccccaggtc ctggtgaacg agggcggtgg ctttgaccgg gcctctggct ccttcgtagc     240
ccctgtccgg ggtgtctaca gcttccggtt ccatgtggtg aaggtgtaca accgccaaac     300
tgtccaggtg acctcagcac tggcccccat ccccggctca ggagggtggg gaggggggaag    360
aaggggagcc cagctgacct ccgggtggac tctccattga cctgtgtcct ggacgaaa       418
```

```
        <210> 246
        <211> 706
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 246
acctcatatt attggagcag aagatgatga ttttggtact gaacatgaac agatcaatgg      60
acagtgcagc tgtttccaga gcattgaatt gctaaaatct cgcccggctc atttggctgt     120
tttcttacgc catgtagttt cacaatttga ccctgcgact ttgctttgtt atctctattc     180
agacctgtat aaacatacca attccaaaga aactcgtcgc atcttccttg agtttcatca     240
gttctttcta gatcgatcag cacacctgaa agtttctgtt cctgatgaaa tgtctgcaga     300
tctagaaaag agaagacctg agctcattcc tgaggatctg catcgccact atatccaaac     360
tatgcaagaa agagtccatc cagaagttca aaggcactta gaagattttc ggcagaaacg     420
tagtatggga ctgaccttgg ctgaaagcga gctgactaaa cttgatgcag agcgagacaa     480
ggaccgattg actttggaga aggagcggac atgtgcagaa cagattgttg ccaaaattga     540
agaagtattg atgactgctc aggctgtaga ggaagataag agctccacca tgcagtatgt     600
tattctcatg tatatgaagc atttgggagt aaaagtgaaa gagcctcgaa atttggagca     660
caaacggggt cggattggat ttcttcccaa aatcaagcaa agtatg                    706
```

```
        <210> 247
        <211> 439
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 247
caagggaggg gggttgatcc cctggcacag gtcgaggccc tggacccaca tcctttgtct      60
gcctccccac cccacagtgc ccgttcatcg acgatttcat cctggccctc cataggaaga     120
tcaagaatga gcccgtggtg tttcctgagg ggccagaaat cagcgaggag ctcaaggacc     180
tgatcctgaa gatgttagac aagaatcccg agacgagaat tggggtgcca gacatcaagt     240
tgcacccttg ggtgaccaag aacggggagg agcccttcc ttcggaggag gagcactgca     300
gcgtggtgga ggtgacagag gaggaggtta agaactcagt caggctcatc cccagctgga     360
ccacggtgat cctggtgaag tccatgctga ggaagcgttc ctttgggaac ccgtttgagc     420
cccaagcacg aatggcgaa                                                  439
```

```
<210> 248
<211> 730
<212> DNA
<213> Homo sapiens
```

```
<400> 248
cccacgcgtc cggaataaag atagataaga cttccgatgg accaaaactt ttcttaacag    60
aagaagatca aaagaaactt catgattttg aagagcagtg tgttgaaatg tatttcaatg   120
aaaaagatga caaatttcat tctgggagtg aagagagaat tcgtgtcact tttgaaagag   180
tggaacagat gtgcattcag attaaagaag ttggagatcg tgtcaactac ataaaaagat   240
cattacaatc attagattct caaattggcc atttgcaaga tctttcagcc ctgacggtag   300
atacattaaa aacactcact gcccagaaag cgtcggaagc tagcaaagtt cataatgaaa   360
tcacacgaga actgagcatt tccaaacact tggctcaaaa ccttattgat gatggtcctg   420
taagaccttc tgtatggaaa aagcatggtt ttgtaaatac acttagctcc tctcttcctc   480
aaggggatct tgaaagtaat aatccttttc attgtaatat tttaatgaaa gatgacaaag   540
atccccagtg taatatattt ggtcaagact tacctgcagt accccagaga aaagaattta   600
attttccaga ggctggttcc tcttctggtg ccttattccc aagtgctgtt tcccctccag   660
aactgcgaca gagactacat ggggtagaac tcttaaaaat atttaataaa aaacaaaaaa   720
aaagggcggc                                                          730
```

```
<210> 249
<211> 466
<212> DNA
<213> Homo sapiens
```

```
<400> 249
attgctgccg ctggatcgac tgctttgcct tgtacgacca gcaggaggag ctcgtgcggc    60
acatcgagaa ggtccacatc gaccagcgca aggggagga cttcacttgc ttctgggccg   120
gttgccctcg aagatacaag cccttcaacg cccgctataa actgctgatc cacatgagag   180
tccactctgg ggagaagccc aacaagtgta cgtttgaagg ttgcgagaag gccttttcaa   240
ggcttgaaaa tctcaagatc cacttgcgga gccacacagg cgagaagccg tatttgtgcc   300
agcatccggg ttgtcagaag gccttcagta actccagtga ccgcgccaaa caccagcgga   360
cgcatctgga cactaaacct tatgcttgtc aaattccagg atgtaccaaa cgctacacag   420
acccaagttc cctaagaaag catgtgaagg cacattcttc caaaga                  466
```

```
<210> 250
<211> 963
<212> DNA
<213> Homo sapiens
```

```
<400> 250
ggagcggctg ccacggaaaa cgcctggccg gacggtggct ggcggccctg cctgggcgcg    60
```

108

```
gagggcggcg gtggcgggcc ccgcggcctt ctctcagctt cctttctcct cacgacggcc    120
tccacagtcc ggagcccggc ggagcccgga cctgggggg agagctgcct ccacggccgg     180
gcacccagac cccaccgtcg cagtcgccac cacctcagtc catccttggt accggcaatg     240
ggcttcgtat cctccagtgc acttgtaact gacttggaca cggaatacta agaactcact     300
tctgtcctca tcccagtcgc gccggcggtg accatctcgg ctctttttggg cttaactgcc     360
gctcctctgg actctgtctg actttgggg caccatggac caaagtggga tggagattcc      420
tgtgaccctc atcattaaag caccgaatca gaaatacagt gaccagacta ttagctgctt      480
cttgaactgg accgtgggga aactaaaaac gcatctatct aacgtttacc ctagcaaacc     540
agtaagtgtg taaaagctgg gggcagctgc tctgacagc agcttttcgt gccgtgtacc       600
ctcctttttc ctgcttctcc cctccagtct tgaatcaaat aggtctcttt tggtagaccg     660
cgaggtattt tgagttctga ggttgtgtct cctgagtgtt cgaaccatca ttaatatttt     720
cctgatgagg ttcagttaat tagtaagagg aagcagaaat atcaagggac ttaagaattg     780
gcaggcaaag accgggcgcg gtggctcacg cctgtaatcc cagcactttg ggaggccaag     840
gcgggcggat cacgaggtca ggagttcgag accagcctta ccggcatggt gaaaccctgt      900
gtctactgaa aatacaaaaa ttaactgggc gtggtggcgc atgcttgtaa tcccagctac     960
tcg                                                                   963
```

```
<210> 251
<211> 894
<212> DNA
<213> Homo sapiens
```

```
<400> 251
gcggggaccc ggatgtgtgt ggtggcggcg ccgaagagc ttgtgtgcgg agctgagagg       60
cctatggatg aggaggacgc ggcggccccg gtttgttctc atgaacaaga tggatgacct     120
caacctgcac taccggtttc tgaattggcg ccggcggatc cgggagattc gagaggtccg     180
agctttccga tatcaggaga ggttcaaaca tatccttgta gatggagata ctttaagtta     240
tcatggaaac tctggtgaag ttggctgcta cgtggcttct cgacccctga ccaaggacag     300
caattatttt gaggtgtcta ttgtggacag tggagtccgg ggcaccattg ctgtgggggct     360
ggtccctcag tactacagct tggatcacca gcctggctgg ttgcctgact ctgtagccta     420
ccatgctgat gatggcaagc tgtacaatgg ccgagccaag ggccgccagt ttgggtcaaa     480
gtgcaactcc ggggaccgga ttggctgtgg cattgagcct gtgtcctttg atgtgcagac      540
cgcccagatc ttcttcacca aaaatgggaa gcgggtgggc tctaccatca tgcccatgtc     600
cccagatgga ctgttcccag cagtgggcat gcactccctg ggtgaggagg tgcggctgca     660
cctcaacgct gagctgggcc gtgaggacga cagcgtcatg atggtggaca gttacgagga     720
tgaatggggc cggctacatg atgtcagagt ctgtgggact ctgctggagt acttagggaa     780
gggcaaaagc atcgtggatg tggggctggc ccaggcccgg cacccactca gcacccgcag     840
ccactacttc gaggtggaga tcgtggaccc tggagagaaa tgctacatcg ccct           894
```

```
<210> 252
<211> 861
<212> DNA
<213> Homo sapiens
```

```
<400> 252
tcccgggtcg acgatttcgt ctggagtgtt agcaccagta ctggatgtga cagcaggcag      60
aggagcactt agcagcttat tcagtgtccg attctgattc cggcaaggat ccaagcatgg     120
aatgctgccg tcgggcaact cctggcacac tgctcctctt tctggctttc ctgctcctga     180
```

```
gttccaggac cgcacgctcc gaggaggacc gggacggcct atgggatgcc tggggcccat      240
ggagtgaatg ctcacgcacc tgcggggggag gggcctccta ctctctgagg cgctgcctga     300
gcagcaagag ctgtgaagga agaaatatcc gatacagaac atgcagtaat gtggactgcc      360
caccagaagc aggtgatttc cgagctcagc aatgctcagc tcataatgat gtcaagcacc      420
atggccagtt ttatgaatgg cttcctgtgt ctaatgaccc tgacaaccca tgttcactca      480
agtgccaagc caaaggaaca accctggttg ttgaactagc acctaaggtc ttagatggta      540
cgcgttgcta tacagaatct ttggatatgt gcatcagtgg tttatgccaa gtaagtgctg      600
atttgttctc attcaacttg tccagagggt ttcaatgtct ttgtgtaaat ggtttacata      660
gtctcactct ctgaatcact catctttaca ctttttagag tttgtaaatg gtgaaagatt      720
tgaaaattaa ggtatgattt cagtgaaaag taccaagtgt tgtattgtgc gaaggaaaag      780
tagactagag ttatttttct ttccttgagt gtcacttgaa tataaagaa taaaaatttt       840
tgaatagtgt taaaaaaaaa a                                                 861
```

```
<210> 253
<211> 556
<212> DNA
<213> Homo sapiens
```

```
<400> 253
caggctgtta agacaagagc ttgtggtgct ttgccacctt caccacccca gtttgatatc      60
tttgctggca gctgggattc gtccccggat gttggtgatg gagttagcct ccaagggttc     120
cttggatcgc ctgcttcagc aggacaaagc cagcctcact agaaccctac agcacaggat     180
tgcactccac gtagctgatg gtttgagata cctccactca gccatgatta tataccgaga     240
cctgaaaccc cacaatgtgc tgctttttcac actgtatccc aatgctgcca tcattgcaaa    300
gattgctgac tacggcattg ctcagtactg ctgtagaatg gggataaaaa catcagaggg     360
cacaccaggg tttcgtgcac ctgaagttgc cagaggaaat gtcatttata accaacaggc     420
tgatgtttat tcatttggtt tactactcta tgacattttg acaactggag gtagaatagt     480
agagggtttg aagtttccaa atgagtttga tgaattagaa atacaaggaa aattacctga     540
tccagttaaa gaatag                                                      556
```

```
<210> 254
<211> 435
<212> DNA
<213> Homo sapiens
```

```
<400> 254
caaaggccag taatagtacc catgagtttc gtattggcct acctgagggg tgggaatccg      60
aaaaaaaggc agttatcccc ctggggatcg ggccacccct gactttaatc tgcctagggg     120
ttctgggggg tattctcatc tacgggagga aaggcttcca aactgcccac ttttacttaa     180
aggacagtcc atcccctaaa gtaatatcca cccctccacc acctatcttt ccaatttcaa     240
aggaggtcgg accaattcca ataaagcact ttccaaagca tgtggcaaat ttacatgcaa     300
gtagggggtt tactgaaaaa tttgaaacac tgaaaaagtt ttaccaggaa gggcaaagct     360
gtactgttga cttaggtatt acagcaaaca gctccaacca cccagacaac aggcacagga     420
atcgatcctt aattg                                                       435
```

```
<210> 255
<211> 698
<212> DNA
<213> Homo sapiens




<400> 255
cctcatttcc tgatcgaaca gcctcacttg tgttgctgtc agtgccagta gggcaggcag.    60
gaatgcagca gagaggactc gccatcgtgg ccttggctgt ctgtgcggcc ctacatgcct    120
caccagccat acttcccatt gcctccagct gttgcacgga ggtttcacat catatttcca    180
gaaggctcct ggaaagagtg aatatgtgtc gcatccagag agctgatggg gattgtgact    240
tggctgctgt catccttcat gtcaagcgca gaagaatctg tgtcagcccg cacaaccata    300
ctgttaagca gtggatgaaa gtgcaagctg ccaagaaaaa tggtaaagga aatgtttgcc    360
acaggaagaa acaccatggc aagaggaaca gtaacagggc acatcagggg aaacacgaaa    420
catacggcca taaaactcct tattagagag tctacagata aatctacaga gacaattcct    480
caagtggact tggccatgat tggttagtct cgctctgtca cacaggctgg agggcagtgg    540
cgggatctcg gttcacccca acctttgcct cacgggttca agggattctc gtgcctcagc    600
cttccaagtg gctgggattg caggtgtgcg ccagtacgcc tggctagttt tagtattttt    660
tgttacagac ggggtttcac catgttggct gggctggt                            698




<210> 256
<211> 736
<212> DNA
<213> Homo sapiens




<400> 256
gtttgaacag cccggaaacc cgggcgaccc acgcgtacga actccgcccc catggggggcc    60
ccactttttc gctttgattc cttcttcccc caaagaggtc ccagctaccc catcctccag    120
aagggacccc attgccccaa cagcgactct tctctctaaa aagaccccag caactctagc    180
ccccaaagag gccctcattc ccccagctat gactgttccc tcccctaaaa agacccagc    240
aattccaacc cccaaagaag ccccagctac cccatcctcc aaagaggcct ccagtccccc    300
agcagtgact ccttccactt acaaaggggc cccatccccc aaagagctcc tcattccacc    360
agctgtgact tctccttccc ccaaagaggc acctactcct ccagctgtga ctcctccatc    420
ccccgaaaag ggcccagcaa ctccagcccc caaagggact cccacttccc cacctgtgac    480
tccttcctcc ctcaaagact cccctacttc cccagcttct gtcacatgta aaatgggggc    540
cactgttcct caagcatcta aagggcttcc agcaaagaaa ggccccacag ctctgaaaga    600
agtacttgtt gccccagctc cagaaagcac gccaatcatc acagctccca ctcggaaagg    660
tccacagacc aaaaagagtt ctgctacttc acctcctata tgcccagatc cctcagctaa    720
gaatggttct aaagga                                                    736




<210> 257
<211> 77
<212> DNA
<213> Homo sapiens
```

```
        <400> 257
ctccgcctcc caaagtactg ggattacagg tgtgagccac cgtgcccagc caagaccttg        60
tatctttaaa aaaaaaa                                                      77




        <210> 258
        <211> 499
        <212> DNA
        <213> Homo sapiens




        <400> 258
aatgctcctt tggtaagaac aattatatgg ctaaattaat ctcagccacc tagttctaaa        60
tgtagagcaa ggattgcaag ggattattta gacaagttca tcaattaagt aaaattagac       120
atgaaggata taagaatgaa tgataaagca agctaaaaat ggtgaaacaa gggatgtctg       180
attggaagta gaagatattt atttaggttc taggacatta gtatcagtga ggacagtaat       240
ttcctgcttg tttgtatttc agtgatcaca tacacttctt tacctgataa cgtctctctt       300
ctctaggctg gttttggtta cggcttgcca atttctcgtc tgtatgccaa gtactttcaa       360
ggagatctga atctctactc tttatcagga tatggaacag atgctatcat ctacttaaag       420
gtatcccttg aattcaatag caaaatcctg tttctaaaac cattgctcct tttatagccc       480
tgagtgctat ggtccggag                                                    499




        <210> 259
        <211> 621
        <212> DNA
        <213> Homo sapiens




        <400> 259
tttcgtgact gtagtcagcc cttagtggat gagagcgcct atgcttcaga aacagcaggc        60
tcccaggatg gacaccccgc cccctgaaga acgcttagag aagcaaaatg aaaaactgaa       120
caaccaggaa gaggagacgg agtttaagga actggacggt ctgagggaag ccttggcaaa       180
cctccgggga ctgtcagagg aggagaggag cgagaaggct atgcttcgct cccgcattga       240
agagcagtcc cagctcatct gcatcctgaa gcggaggtca gatgaggccc tggagcgctg       300
ccagatccta gagctgctca atgcagagct ggaggagaag atgatgcagg aggctgagaa       360
gctcaaggcc caggggtgagt acagtcggaa actagaggaa cgctttatga ccctagcagc       420
caaccacgag ttgatgctcc gcttcaagga tgaatacaag agtgagaaca tcaagctgag       480
ggaggagaat gagaagctga ggctggagaa taacagcctc ttcagccagg ctctgaagga       540
tgaggaggcg aaagtattac agctcacagt ccggtgtgag gccctcactg gggagctaga       600
aacgctgaag gagaggtgtg c                                                 621




        <210> 260
        <211> 414
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 260
agatccgggt gcgagccacg cgtccgtgca ggtgcaggta ctgaaagagc aacttttttgc      60
tgggcgtatg ccttcaccct tccgctcctg cgcactcatg ggaatgtgtg cagtagaag       120
cgctgataac ttgtcatgcc cttctccatt gaatgtaatg gaaccagtaa gcttctttcc      180
tcttaaatca ctggggaagg gaatgataca acatttcaga cacatagttt ccctagttta      240
gatgaaatat atgtttattt taaatacata atttgataaa ttattgttga ttggaagtga      300
ctttcacctt tgaaagtcca ttgctgtctg aagccactag aaagccacct gaattgcaat      360
agtgatttat ctttctgact aaaggaggta atgcaccata aaaacatgta cagt            414
```

```
        <210> 261
        <211> 620
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 261
gtaaccacca ctactcatag cgttggacga gggcatgagc tacagttgct taatgaagaa      60
ctgagaaaca ttgagcttga gtgtcagaat atcatgcagg ctcacaggct ccagaaagtg      120
acagaccagt atggagacat ctggacattg catgatggag gattccggaa ttataacacc      180
agcatagata tgcaaagggg aaagctagat gacatcatgg agcatccaga aaagtctgac      240
aaggacagtt ctagtgctta caacacagct gagagctgca gaagtactcc gctcactgta      300
gaccgttccc ctgacagttc ccttccaagg gtgatcaacc tcaccaataa gaaaaacctg      360
agaagcacaa tggcagccac ccagtcctct tccggacaga gcagtaaaga gtcgacctcc      420
accaaagcca aaaccactga gcaaggttgt agcgctgaaa gcaaggagaa ggttttagaa      480
ggcagcaagc ttcctgatca agagaaggca gtcagcgaac acatccctta cctctctcct      540
taccacagct cctcatatag atatgcaaac atcccagcac acgcccggca ttatcaaagc      600
tacatgcagt taattcaacg                                                  620
```

```
        <210> 262
        <211> 418
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 262
gggtctgggg ctgcctggcc accgtgtcca cccacaagaa gatccaagga ctgccatttg      60
ggaactgcct gccgtcagt gatggcccct tcaacaatag cactgggatt cctttcttct      120
acatgacagc caaggacccc gtggtggctg atctgatgaa gaaccccatg gcctcgctga      180
tgctgccaga atcagaaggg gagttctgca gaaaaaacat cgttgatccg gaagatcccc      240
gatgtgtcca gttaacgctc actggccaga tgatcgcagt gtctccagaa gaagtagaat      300
ttgccaagca agccatgttt tcaaggcacc cagggatgag gaagtggcct cgtcaatatg      360
aatggttctt tatgaagatg aggatagaac atatctggct tcagaaatgg tatggagg        418
```

```
        <210> 263
        <211> 441
        <212> DNA
        <213> Homo sapiens



        <400> 263
tttcgtcaga gccgcgggag gacggttgcc tggtattatt agcaagcagc aaatatggcg    60
gtggcgcgcg tggacgcggc tttgcctccc ggagaaggat cagtggtcaa ttggtcagga   120
cagggactac agaaattagg tccaaattta ccctgtgaag ctgatattca cactttgatt   180
ctggataaaa atcagattat taaattggaa aatctggaga aatgcaaacg attaatacag   240
ttatcagtag ctaataatcg gctggttcgg atgatgggtg tggccaagct gacgttgctt   300
cgtgtattaa atttgcctca taatagcatt ggctgtgtgg aagggctaaa ggaactagta   360
catctggaat ggctgaattt ggcaggaaat aatcttatag ccatggaaca gatcaatagc   420
tgcacagctc tacagcatct c                                             441



        <210> 264
        <211> 832
        <212> DNA
        <213> Homo sapiens



        <400> 264
tatttcgagc ggcagttggg gcggtaccag agggtgcctg gaaggatacg gcccagctcc    60
acaagagcga ggaggcgaag cgggtgctgc ggtattacct cttccagggc cagcgctata   120
tctggatcga gacccagcaa gccttctacc aggtcagcct cctggaccat ggccgctctt   180
gtgacgacgt ccaccgctcc cgccatggcc tcagcctcca ggaccaaatg gagaggaagg   240
ccatttacgg ccccaacgtg atcagcatac cggtcaagtc ctaccccccag ctgctggtgg   300
acgaggcctt cagcatcgcg ctgtggctgg ctgaccacta ctactggtac gccctgtgca   360
tcttcctcat ttcctccatc tccatctgcc tgtcgctgta caagaccaga aagcaaagcc   420
agactctaag ggacatggtc aagttgtcca tgcgggtgtg cgtgtgccgg ccaggggggag   480
aggaagagtg ggtggactcc agtgagctag tgcccggaga ctgcctggtg ctgtcccagg   540
agggtgggct gatgccctgt gatgccgccc tggtggccgg cgagtgcatg gtgaatgata   600
gctctctgac aggagagagc attccagtgc tgaagacggc actgccggag gggctggggc   660
cctactgtgc agagacacac cggcggcaca cactcttctg cggaaccctc atcttgcatg   720
cccgggccta tgtgggaccg cacgtcctgg cagtggtgac ccgcacaggt atgagccggg   780
aggctgggct tgagagagat ccgggctcag cacccttgaa gaggtggagt gg           832



        <210> 265
        <211> 714
        <212> DNA
        <213> Homo sapiens



        <400> 265
tttcgtcggg ggcgggctcc accttcacct ctgccttctg ctctgcttca tgctgcccga    60
```

```
ggacgctgcc atggctgtgc tgacggcctc caaccacgtg agcaacgtca ccgtgaacta      120
caacatcacc gtggagcgga tgaacaggat gcagggcctg cgggtctcta cagtgccagc      180
cgtgctgtcc cccaatgcca cgctggcact gacggcgggc gtgctggtgg actcggccgt      240
ggaggtggcc ttcctgtgga cctttgggga tggggagcag gccctccacc agttccagcc      300
tccatacaac gagtccttcc cggttccaga cccctcggtg gcccaggtgc tggtggagca      360
caatgtcacc cacacctacg ctgccccagg tgagtacgtc ctgaccgtgc tggcatctaa      420
tgccttcgag aaccggacgc agcaggtgct gatccgcagt ggccgggtgc ccattgtgtc      480
cttggagtgt gtgtcctgca aggcacaggc cgtgtacgaa gtgagccgca gctcctacgt      540
gtacctggag ggccgctgcc tcaattgcag cagcggctcc aagcgagggc ggtgggctgc      600
acgtacgttc agcaacaaga cgctggtgct ggatgagacc accacatcca cgggcagcgc      660
aagcatgtga ctggtgctgc ggcggggcgt gctgcgggac ggcgagggat acac           714
```

```
            <210> 266
            <211> 1872
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 266
cccggaattc ctgggtcgac tatttcgtgg aaaggctgcc actctgcatg tgcacagtga       60
ccagaagccc cttcacgatg gggccctcgg tcgcagcag aacttggttc gcatgaagga       120
ggcgctgagg gccagcacca tggacgtcac cgtggtcctg cctagtgggc tggagaagag      180
gagcgtgctc aatgggagcc atgcgatgat ggacctactg gttgaacttt gccttcagaa      240
ccacctgaat ccatcccacc atgcccttga aattcggtct tcagaaaccc aacaaccttt      300
gagtttttaag ccaaatactt tgattgggac cctgaatgtg catactgtgt ttctgaaaga      360
aaaagttcct gaagagaagg ttaagcctgg tcccccttaag gtgcctgaga aatctgtgcg      420
tttggtcgtg aattacctgc ggacacaaaa agctgttgtg cgtgtgagcc ctgaggttcc      480
tctccagaat attctcccag tcatttgtgc aaagtgtgag gtcagcccag agcacgtggt      540
tctcctcagg gacaacattg ccggagagga gctggagctg tccaagtccc tgaacgagct      600
cgggataaag gagctctacg cgtgggacaa cagaagagaa acctttagga aatcatcact      660
tggcaatgat gagacagata aagagaagaa aaaatttctg ggatttttca aagttaataa      720
aagaagcaat agtaagggct gtttaacgac ccccaactcc ccatccatgc actcacgttc      780
tcttacgctg ggtccatccc tctcgctggg cagcatctca ggggtgtccg tgaagtcgga      840
gatgaagaag cgccgagccc ctcctcctcc aggttcaggg ccacctgtgc aagacaaggc      900
atcggaaaag gtatctcttg ggtcacagat tgatttacag aagaagaagc ggcgagcgcc      960
agctccccct ccaccacagc caccaccacc gagtcccctg atccccaacc gcactgagga     1020
taaggaggag aacaggaaga gcacgatggt ttattgctgt gcgtcattcc ctactcaggc     1080
caagcgcttc tgatggacgg gcctcttcct gacctcggac ctttcccagt gtctcttctg     1140
ccctggctct gattttcctg ttgttcttcc tcctttcagg ataaaagggc tcattgtata     1200
cccagaattt acttcctttg gggtttacat ataaatgcat taataacaga gatttgtttg     1260
attgaggttt atatttttt gaaggaggta aattatatgc aaattttagg ttgataatat     1320
tcacctgtct gaaattcact gatacttgga aatgttcctg tgaagaactc tgctttattt     1380
taattcatta ttaattcatg tttttcttat tggatattca gttccagaat ttattgccaa     1440
tttttcttaa aactagattg tatccataaa ttgaccagta tagtcaattt ggatagaact     1500
gaaactttct gtctacctgg taaaactaag tgcctaaaaa catgaactat aaatgtagtt     1560
actaggaact cacaacttat atatactatc cattcaatga tacataggac ccaatgtctt     1620
tgtgttttg aggttttcct gttactgtgt actttgccat tttacatagt tcactaaaaa     1680
gaaagaagtg ggagaagaag gggggtctat tcattattct atattatgat tctcttcatt     1740
attctgttct cttcattatt ctattcattt cttcacccat ttattcacta aacagtgaca     1800
tagtacttac ttgatgctag gtattacacc agttttgtgg ctataagag tgaataacaa     1860
gcacgtgacc tt                                                          1872
```

```
            <210> 267
```

115

<211> 684
<212> DNA
<213> Homo sapiens

<400> 267

```
tgtagataca gagtagctaa ttctaaaatt catatggaag gcaaagaaac taaattagcc      60
aaaacaattt tgaaaaagat ttcaaaaaaa ttttgaagga atcatgctgc ccagttttaa     120
gacttactat aaagctgtga taatcaaggc aatctggtat ttatgaaagg ataaacacat     180
agatcaatgg aataaagtcc aaaaccagac tcacataaat agcaattgat ttctgacaaa     240
ggtgaaaaga caactcaatg gggaatggag agttttttcaa cagatgattt taaaacaact     300
gaacatccat atgcaaaaaa ataaacctac ctaaatttca cagcttatac aaaaattaac     360
ctaaaatgga tcacggatct aaatgtagaa ctaaatttat aaaatttta gaagaaaaaa     420
atccataggc cgggcacggt ggctcatgcc tgtaatccca gcacttcaga ggctgaggcg     480
ggcagatccg ttgaggtcag ttcaagacca gcctagccta tgtggtgaaa tcccaactct     540
actaaaaata aaaaataaaa aaaaatggg ctgggagtgg tggtgcacac ctgtagtccc     600
agctacttgg gagactgaag cacaagaatc acttgaaccc agcaggcaga ggttgcagtg     660
agtggagatt gtgccactgc accc                                          684
```


<210> 268
<211> 453
<212> DNA
<213> Homo sapiens

<400> 268

```
ggtcgacgat ttcgcccgcc gtcggacgag gagcgggagc cgtgggagcc gtggacgcag      60
ctgcgcctgt cgggccacct gaagccgctg cactacaatc tgatgctcac cgccttcatg     120
gagaacttca ccttctccgg ggaggtcaac gtggagatcg cgtgccggaa cgccacccgc     180
tacgtagtgc tgcacgcttc ccgagtggcg gtggagaaag tgcagctggc cgaggaccgg     240
gcgttcgggg ctgtccctgt agccggtttt ttcctctacc cgcaaaccca ggtcttagtg     300
gtggtgctga ataggacact ggacgcgcag aggaattaca atctgaagat tatctacaac     360
gcgctcatcg agaatgagct cctgggcttc tttcgcagct cctatgtgct ccacggggag     420
agaagattcc ttggggttac tcagttttcg cct                                453
```


<210> 269
<211> 525
<212> DNA
<213> Homo sapiens

<400> 269

```
ggcacgagaa ctggtgctta atttaatgcc aattcatgat gtaggtttct aagcagcaca      60
taaaaggggc tttttaggta gcactgagta ctttactaaa aatacaaaaa ttagccaggg     120
ggggggtgc acgtctttaa tcccagctac tcagggcggg ggccaggggg tggggtaggg     180
tggggctga gacaggagaa gcacttgaac ccaggaggcg gaggttgcag tgagctgaga     240
ttgtgctact gtactccaac ctgggcaaca aacagagtga gacactgtct caaataaata     300
```

```
aataaataga taaataaaat aaaataaaat aaaaagaact cgaccctttt tacaatagct    360
aaaggaaaat aaaatactta agaatatact taaccaagga ggtgaaagac ctctacaaag    420
aaaactacaa aacactgctg aaagaaatca cagatgacac aaacaaaaac acatcccaag    480
ctcatggaca ggtagaatca atactgtgaa aatgactata ctgcc                   525
```

```
        <210> 270
        <211> 880
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(880)
        <223> n = a,t,c or g
```

```
        <400> 270
cccagtccca cattgagccc tgatcccatc caagtccata gacttggcct ctgaccaaac     60
ctgaccctgc acttgtcact taaggtggtc ccatattcag ctcagaccct gaaccgagct    120
ctgaccctgg cttctgactg aatctgtgac agactaaggc ctgaccctgg ccctatacca    180
cgtctccacc cgtgtcctca actgagtgct gaccccaaac ctagacagcc ctacctgatc    240
cttcccccag gcctgtcccc gccgcttcat ctcaaaagtt gaaggtgagg agccggtaaa    300
caggtctgga gcctggtctc agactcagcc tgagcaagct cagtctgggg tcattgggcc    360
tgtaaccccg ggcaggccct tgtttaggga tgcagggtctc accctagggg tataagggat   420
ttctgtgccc atcagaactt nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn    480
nnnnnnnnnn nnnnnnnnnn attttgctgt tagcatatgt gatgaccttg acttcacctc    540
cctggcgcca atatcctctt ctgtaaaatg gcttatgcat tacaaagtga ggtcctgcca    600
gtgactacac ctagaggcat taagtgcctt tgtggactcc tgccctgcac ctcacctctc    660
ccagcttttt aaccccctga ggaaccttct taccttgagt ccctcacccg ctacaggcca    720
tccatgagca gatgaactgc aaggagtatc aggaggacct ggccctgcgg gctcagaacg    780
atgcggctgc ccggcggccg tcagagatgt ttaaggtgag gctggctcag ggtcgtggcc    840
tagcatcttt aagttctggg atccagtctg gggtagggag                          880
```

```
        <210> 271
        <211> 1066
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1066)
        <223> n = a,t,c or g
```

```
        <400> 271
tgaccctcgt aagngcgttg gaattccctc acctgtgtgg tcctcacctt cctgggccac     60
cgcctgctga aacggtttct ggtgccaaag ctgaggaggt ttctcaagcc tcagggccat    120
ccccgcctgc tgctctggtt taagaggtga gtgagctcac agccccgagg cagggcaggg    180
gagggcccct gagctgaggg gttggctcca gggttatggc cagggctgga ggaggaggaa    240
ggctctgtgt catggagaac tctctggcgc cccagggcag gagccagtgg gtggcttcaa    300
```

```
acaaagcagc atctttgtgg tgtttcacca gttcttagtc ccagttacag caggtgactg      360
tggtggacga aaactggact caacagtttc ctccattcag ggatcccagg ccatggagca      420
aggagggccc gaatcagtac ctccctcaga tcacctggac agtgtgagac aaaaagccgc      480
agggaccatc cctggagggg gattcagcag gctcgatcgg ggtccaggtg ctggtatttt      540
tcattagcct caggggatt ctgatgtagc cagcagcgtc cttggacaac agtttgagat      600
ctgctgcttt tcaaactgga ttccttggag cgctggaaat ctcagcgatg tcacagggca      660
ggagagggag gttgtggagg gaaaattcag acttcccgcc cagcccacca tttcaccagg      720
cagctctaaa tttatgtgtt ttataagcca aggttcacac aaaaaagaaa attcgctggg      780
gggaaaaaaa cagtttctat ggcttaaaaa aaagtctgaa gaccaccagt ctatttcaat      840
actctatttt gttgatgaag aagctggtga ccaaagatac ccaaagacta agtcaggggg      900
atgcaggggt acaggggtgc ctctcacttt cccaaagtga gatccacata ccacagcaaa      960
atgatttgag ccagcctgtg gatgaacaca tttaaaattt tatttataaa tacatttact     1020
gttacatttg acttctcttt attaaataca tttgtgattt ataaaa                    1066
```

```
        <210> 272
        <211> 659
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 272
tacggggaat tcgtcaccta ccaaggggtg gctgtgacgc ggagccggaa agaaggcatc       60
gcacacaact acaaaaatga gacggagtgg agagcgaaca tcgacacagt gatggcgtgg      120
ttcacagagg aggacctgga tctggtcaca ctctacttcg gggagccgga ctccacgggc      180
cacaggtacg gccccgagtc cccggagagg agggagatgg tgcggcaggt ggaccggacc      240
gtgggctacc tccgggagag catcgcgcgc aaccacctca cagaccgcct caacctgatc      300
atcacatccg accacggcat gacgaccgtg gacaaacggg ctggcgacct ggttgaattc      360
cacaagttcc ccaacttcac cttccgggac atcgagtttg agctcctgga ctacggacca      420
aacgggatgc tgctccctaa agaagggagg ctggagaagg tgtacgatgc cctcaaggac      480
gcccacccca agctccacgt ctacaagaag gaggcgttcc ccgaggcctt ccactacgcc      540
aacaacccca gggtcacacc cctgctgatg tacagcgacc ttggctacgt catccatggg      600
gtgagtcgcc tgctggaggc accacctcca ggggctccct ccccaggctc tgggtcttc      659
```

```
        <210> 273
        <211> 412
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 273
acgcgacttc tcgggtcgac ccacgcgtcc gcacatataa cacatcacgc accttttgag       60
tggctacctt ggttctcgcc tttcttttca agagaccatt cttcaacaga actgtaagga      120
ttcttcttgg ctgaatcaga tgtgacgcat cccacttctg cgtttgaggt ctagcacata      180
ccgctccaag ggctttgacg tcacagtgaa gcactcacac ggaagctgga cgggcttcgg      240
tggggaagac ctcgccacca tccccaaagg gttgaatact tattttcttg tcaacattgc      300
cactattttt gaatcaaaga atttcttttt gcctgggatt aaatggaatg gaatacttgg      360
cctatcttat gccacacttg ccaagccatc aagttctctg gagaccttct tc             412
```

```
<210> 274
<211> 522
<212> DNA
<213> Homo sapiens


<400> 274
gaattaagag ttactccggg ccaaatggcc ggagttgtca gatctggcag cgtcttcgct        60
ggggctccag ggagctgctg ctggggtgga agctctcaca ctctttctcc acgtgccctt       120
tccagttccc tgacatcgtg gagttctgcg aggccatggc caacgccggg aagaccgtaa       180
ttgtggctgc actggatggg accttccaga ggaaggtaag gcgtctgatc caggtctgga       240
gctgggattg aggagggcaa gaggcttctg gatgggcaca gagacaccag ctctgggtga       300
ccagggctca gccaccacag ggttacggcc gagctgctca ggccttggct gagccaaggg       360
actccatggt ctgtgcagac tgcgtgccat ctgttgcggc aggtgctttg aattggcaaa       420
gggacagagc cgggcatggt gctctggggg ttgggggaag gactaaggtc agagcaaact       480
ctcctggctt cagtacttgt gaatcagagg gtttaaaaga aa                          522
```

```
<210> 275
<211> 650
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(650)
<223> n = a,t,c or g
```

```
<400> 275
gaattctgct tatgcaccaa tttgcagctc ctgcaaccat gatgcagcct cacccggacc        60
tttcaacatt ttcccttttca cctaaaactg tattttttctc tgctaagacc ggctacccta      120
ctttcatttt cctttcactc ttcttggctc ttttgggcct tttaggaatt tgggatgatt       180
caggctctga caggcatggt actagattta ttttaggctg ctcttttgct gttgtccaac       240
aggccaagga gagatttaaa tgatttatcc aatatttgct aaatagtcat gtgtttcatt       300
tatcccatat atagttcagc cttaatattg ttttgtttt gatttgttac actagtgcat        360
acatagagac gtgaagccag aaaatatcct catcacgaaa cattccgtga ttaagctttg       420
tgactttgga tttgctcggc ttttgactgg accgagtgac tactatacag actacgtggc       480
taccaggtgg taccgctccc ctgagctgcn ggtgggggac acgcagtacc ggccccccgg       540
tgggatgttt ggggcaattg ctgtgtctn tgctgagctn gctgtcaggg aagtgcctct        600
ggtggccagg aaaatcggaa tgttggatca gctgtatctg attaggaaga               650
```

```
<210> 276
<211> 497
<212> DNA
<213> Homo sapiens
```

```
<400> 276
cccttgatga ccatctagtc agtgcggtgg aattcccatg acagacgtat ctgactggtc    60
atgtggtcag caagcctcgc ctttggtcag gccctggagg gtacagctga cccatagggc   120
cacttccatg gcactgggca agtggctgta ttggaaatga agtcgttgcc cccgatttct   180
ttggggccag gttgagcttt cctgcccaga gcacggaggc taaagggggt gggctttgga   240
ctggattggg gctgacctca gcctacacct gcaggaggag gtggagacag aggtggcctg   300
ggaggaatgt gggcacgtcc tactgtcact gtgctacagc tctcagcagg gtggcttgct   360
ggtaggtgtg ctgcgctgcg cccacctggc ccccatggat gccaatggtt actcggaccc   420
cttcgtgcgc ctgtgagtga actggggtag gcaggcggga ggtgaggata aggcggtgac   480
tcctcacctc tccaggg                                                  497
```

```
<210> 277
<211> 428
<212> DNA
<213> Homo sapiens
```

```
<400> 277
tggtggaatt ctcgccatgg aatatgcacc aggcggcact ctggctgagt tcatccaaaa    60
gcgctgtaat tccctgctgg aggaggagac catcctgcac ttcttcgtgc agatcctgct   120
tgcactgcat catgtgcaca cccacctcat cctgcaccga gacctcaaga cccagaacat   180
cctgcttgac aaacaccgca tggtcgtcaa gatcggtgat ttcggcatct ccaagatcct   240
tagcagcaag agcaaggcct acacggtggt gggtaccca tgctatatct cccctgagct   300
gtgtgagggc aagccctaca accagaagag tgacatctgg gccctgggct gtgtcctcta   360
cgagctggcc agcctcaaga gggctttcga ggctgcgaac ttgccagcac tggtgctgaa   420
gatcatgg                                                            428
```

```
<210> 278
<211> 427
<212> DNA
<213> Homo sapiens
```

```
<400> 278
gtccagtgtg gtggaattca ccaggtgtcc ggggcagtgg tagtatctgg gctgctgcag    60
ggcatgatgg ggctgctggg gagtcccggc cacgtgttcc cccactgtgg gcccctggtg   120
ctggctccca gcctggttgt ggcagggctc tctgcccaca gggaggtagc ccagttctgc   180
ttcacacact gggggttggc cttgctgtac gtgagtcctg agaggcgtgg gatggtgccc   240
agtggggggtg tatggggga ctaggggagg gcagaactgc tggtcctatc agattcagca   300
gcgactggaa tagggacata tttttatt ggaatccaag actttccctt gattcatctg   360
gtctccttga atttcacact gttttctgct gtcccccaag gtcacttcct attccttcca   420
tgggagt                                                             427
```

```
<210> 279
```

```
        <211> 561
        <212> DNA
        <213> Homo sapiens




        <400> 279
cccagaatga ccgggtcgac ccacgcgtcc gcacccagct atggaggcag ctgcaggaac      60
aacttgtttt accgagaaga aacctacact ccaaaagctg agacggacga gatgaatgag     120
gtggaaacgg ctcccattcc tgaagaaaac catgtttggc tccaaccgag ggtgatgaga     180
cccaccaagc ccaagaaaac ctctgcggtc aactacatga cccaagtcgt cagatgtgac     240
accaagatga aggacaggtg catagggtcc acgtgtaaca ggtaccagtg cccagcaggc     300
tgcctgaacc acaaggcgaa gatctttgga agtctgttct atgaaagctt cgctagcata     360
tgccgcgccg ccatccacta cgggatcctg gatgacaagg gaggcctggt ggatatcacc     420
aggaacggga aggtcccctt cttcgtgaag tctgagagac acggcgtgca gtccctcagg     480
taactactct gtgatcgggg ctctgtgaaa cggttttcct gtttatgacg gtgttgttga     540
aattttgaaa aataccacac a                                               561




        <210> 280
        <211> 792
        <212> DNA
        <213> Homo sapiens




        <400> 280
atttttgatg ccatgtggct acattggttt tagaatacta ataaaatcca ttgctttaa      60
aataaataaa taaaccccat agcacatcct ccatacaaca tctgttgtcc ctcaagatac     120
aattgttacc actatcatct aaccattatt ttatgataac tttaaaatat caacttggca     180
agaaaatatt ccacaaaaca cactctgcct ttttacttta aagagtcctt ggctacctgg     240
gccaatatta ttctcatttg taggatttag gttccacaga atataaatatg tgccttttttc     300
tgtgttccct gcagatttgc aagtaccatc ccttttggg gccttacttt gcacctccag     360
catctgggaa acaatgtttt cctgttgcag actctctttg gtgcagtcac cctcctggcc     420
aattgtgttg caccttgggc actgaatcac atgagccgtc gactaagcca gatgcttctc     480
atgttcctac tggcaacctg ccttctggcc atcatatttg tgcctcaaga aatgcagacc     540
ctgcgtgtgg ttttggcaac cctgggtgtg ggagctgctt ctcttggcat tacctgttct     600
actgcccaag aaaatgaact aattccttcc ataatcaggg gaagagctac tggaatcact     660
ggaaactttg ctaatattgg gggagccctg gcttccctcg tgatgatcct aagcatatat     720
tctcgacccc tgccctggat catctatgga gtctttgcca tcctctctgg ccttgttgtc     780
ctcctccttc cg                                                         792




        <210> 281
        <211> 1047
        <212> DNA
        <213> Homo sapiens




        <400> 281
ggtcttggtt tcaagggatc atatgaaaag tgcccagcag ttcttccagt tggtgggagg      60
```

121

```
atcagctagt gaatgtgata caataccagg gaggcagtgc atggcttcct gtttcttcct     120
gcttaagcaa tttgatgatg ttttgattta cctcaactca tttaagagcc acttctataa     180
tgatgacatc tttaacttta attatgccca agccaaagct gcaacaggca ataccagtga     240
gggcgaagag gcgttcctct tgatccaaag tgagaagatg aaaaatgatt acatttacct     300
cagctggtta gctcggggct atattatgaa taagaaacca agactagcct gggaacttta     360
tcttaagatg gaaacctccg gcgagtcctt cagtctctta cagctcattg ctaatgactg     420
ctacaagatg ggccagtttt actattctgc caaagctttt gatgtccttg agaggctgga     480
tcctaaccct gaatattggg aaggcaaacg gggtgcctgt gtgggcattt tccagatgat     540
catagctggg agagaaccca agagaccct tcgagaagtg ctccatttac tgagaagcac     600
aggtaacacc caagtagaat acatgatccg gatcatgaag aaatgggcca aagaaaacag     660
agtgtccatc ctaaaatagc gccagtgcac taggaaccag cttctacttt gacataaaac     720
tggaaatcat tttcactcca gctttaatct gtgatacagg gctctgtttt attgacattt     780
tccttccttg ctctttaagc ctcaaggtca gagactgact tgctgagact tagtctcctg     840
gctgaacaga gtgccatagt ctgtgaccct gtatgatcct agtagcaata agatttttgga     900
cttatctggt gcctttcttc caaaaatgct cagagtactt ttatgcaatt tactgacttt     960
aaggaaaaca gtataacttt ttttgttag cattttatgg cattgtctcc tggctgcaat    1020
aacaaacatc tttgatgttc aagaatc                                        1047
```

```
        <210> 282
        <211> 357
        <212> DNA
        <213> Homo sapiens




        <400> 282
ctttaaaagt ttctgatgaa ttagtgcagc aatatcaaat taaaaaccag tgtctttcag      60
caatagcatc tgatgcagaa caagaaccta aaattgatcc atatgcattt gttgaaggag     120
atgaggaatt ccttttttcct gataaaaaag atagacaaaa tagtgagaga gaagctggaa     180
aaaaacacaa ggtaagagaa atcacagtac accaaagggt cactgttgat tttgtagcac     240
tgcatatagt aacactctta ctaccacagt tatctcactt cttttgtctt agaatagaaa     300
gagtaatcat ttatttagaa aaacctattt ttgcccggct gcggtggctc atgcctg        357
```

```
        <210> 283
        <211> 536
        <212> DNA
        <213> Homo sapiens




        <400> 283
ctggggtgcc ccgcaacctg ccttccagcc tggagtatct gctgttgtcc tacaaccgca      60
tcgtcaaact ggcgcctgag gacctggcca atctgaccgc cctgcgtgtg ctcgatgtgg     120
gcggaaattg ccgccgctgc gaccacgctc ccaacccctg catggagtgc cctcgtcact     180
tcccccagct acatcccgat accttcagcc acctgagccg tcttgaaggc ctggtgttga     240
aggacagttc tctctcctgg ctgaatgcca gttggttccg tgggctggga acctccgag     300
tgctggacct gagtgagaac ttcctctaca aatgcatcac taaaaccaag gccttccagg     360
gcctaacaca gctgcgcaag cttaacctgt ccttcaatta ccaaaagagg gtgtcctttg     420
cccaccttgt ctctgggccc cctttccttc ggggaagcct gggtcgcccc ttgaagggag     480
ctgggacatg gcacggcaat ctttctttcc cgctccactt cgaatggggg aagacc         536
```

```
       <210> 284
       <211> 440
       <212> DNA
       <213> Homo sapiens




       <400> 284
gtatcttatt tgcggcgctg atctggagtt cgttcgatga gaatatagaa gcttcagccg      60
gaggcggcgg tggttcgtcc atcgacgctg tcatggttga ttcaggtgcg gtagttgagc     120
agtacaaacg catgcaaagc caggaatcaa gcgcgaagcg ttctgatgaa cagcgcaaga     180
tgaaggaaca gcaggctgct gaagaactgc gtgagaaaca agcggctgaa caggaacgcc     240
tgaagcaact tgagaaagag cggttagcgg ctcaggagca gaaaaagcag gctgaagaag     300
ccgcaaaaca ggccgagtta aagcagaagc aagctgaaga ggcggcagcg aaagcggcgg     360
cagatgctaa agcgaaggcc gaagcagatg ctaaagctgc ggaagaagca gcgaagaaag     420
cggctgcaga cgcaaagaaa                                                  440




       <210> 285
       <211> 119
       <212> DNA
       <213> Homo sapiens




       <400> 285
gcgatggaaa tcgtccacga gccgcgcgac ctcgagcgtt acatgcgcga ggccgtgaag      60
gtgtcgaacg attcgccggt gctgctcgac cgcttcctga acgacgcgat cgagtgcga      119




       <210> 286
       <211> 398
       <212> DNA
       <213> Homo sapiens




       <400> 286
aaacagggga tttaagtgtg tcttttgtgt ttgcaaggca ctaacaccac tcccgtctgt      60
atttaaatgc tgtccccagg ttacgactat ggctatgtct gcgtggagtt ttcactcttg     120
gaagatgcca tcggatgcat ggaggccaac caggttgctt tatacttcgg tcaaatgatg     180
ctggaaggat atattttttt atatatgggg agggagggtt tcaaatgatt ttactttgga     240
aaggtacaag aagtctatct gtggagcata ctgtattcca accatcggtt gtgaggaaaa     300
tctttaaaaa ggctggaaag ctttctctag aaaacttaat gggcacagag tgcattttaa     360
aagctagagc ccagttgctt ttggactaga ttccaaaa                             398
```

```
    <210> 287
    <211> 1177
    <212> DNA
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(1177)
    <223> n = a,t,c or g



    <400> 287
cccacgcgtc cgctcctctg ggggtcaaga ggaccccgcc agccagcagt gggcacgacc      60
gcgcttcaca cagccctcca agatgaggcg ccgggtgatc gcacggcccg tgggtagctc     120
cgtgcggctc aagtgcgtgg ccagcgggca ccctcggccc gacatcacgt ggatgaagga     180
cgaccaggcc ttgacgcgcc cagaggccgc tgagcccagg aagaagaagt ggacactgag     240
cctgaagaac ctgcggccgg aggacagcgg caaatacacc tgccgcgtgt cgaaccgcgc     300
gggcgccatc aacgccacct acaaggtgga tgtgatccag cggacccgtt ccaagcccgt     360
gctcacaggc acgcaccccg tgaacacgac ggtggacttc gggggggacca cgtccttcca     420
gtgcaaggtg cgcagcgacg tgaagccggt gatccagtgg ctgaagcgcg tggagtacgg     480
cgccgagggc cgccacaact ccaccatcga tgtgggcggc cagaagtttg tggtgctgcc     540
cacgggtgac gtgtggtcgc ggcccgacgg ctcctacctc aataagctgc tcatcacccg     600
tgcccgccag gacgatgcgg gcatgtacat ctgccttggc gccaacacca tgggctacag     660
cttccgcagc gccttcctca ccgtgctgcc agacccaaaa ccgccagggc cacctgtggc     720
ctcctcgtcc tcggccacta gcctgccgtg gcccgtggtc atcggcatcc cagccggcgc     780
tgtcttcatc ctgggcaccc tgctcctgtg gctttgccag gcccagaaga agccgtgcac     840
ccccgcgcct gcccctcccc tgcctgggca ccgcccgccg gggacggccc gcgaccgcag     900
cggagacaag gaccttccct cgttggccgc cctcagcgct ggccctggtg tggggctgtg     960
tgaggagcat gggtctccgg cagccccca gcacttactg ggcccaggcc cagttgctgg    1020
ccctaagttg tacccccaaac tctacacagg acattccaca ccacacacat acacacaccc    1080
cccacccctcc tgccaattaa acagtagcca ttccccnaaa atnnnnnnnn nnnnnnncnn    1140
nnnnnnnnnn nnnnnctcgg cccccgccta ttcaccg                            1177



    <210> 288
    <211> 100
    <212> DNA
    <213> Homo sapiens



    <400> 288
tgaattttca ttttacaggg aagtgtttgt ttatgtcagg gctcagtgag gtccagctga      60
cccatatgga tgatcacact ctaccagggt attgaagctc                           100



    <210> 289
    <211> 406
    <212> DNA
    <213> Homo sapiens
```

124

```
        <400> 289
cggcacgagc ggcacgagag tcagagggtt ttaatttact tgtgaagctc acactattga      60
aactaattgc aatgcttgac tttatttct ttagagtcca agaaagagaa aaacaaggca      120
tagcacaaat cccctctag agtgtcatgt tggttgggta atggattcca gagaccatgg      180
gccaggaaca tcctctgtca gcacttcaaa tgcttcacct tcagaaggcg caccactagc      240
aggaagttat ggatgtactc ctcattcatt cccaaagttc cagcatcctt ctcatgaact      300
tttgaaggaa aatggcttta cccaacaagt gtaccacaag tatcgtcgaa gatgcctaag      360
tgagagaaaa cgcttgggaa ttggtcagtc caagaaatg aatacc                      406




        <210> 290
        <211> 359
        <212> DNA
        <213> Homo sapiens




        <400> 290
cccggcagcg gcggcagcgc ggggggccga gacggcagtg cctaccaggg cgcgctgttg      60
cctcgagaac agttcgcggc cccgcttggg cggccggtgg ggacctcgta ctccgccacc      120
tacccggcct acgtgagccc cgacgtggcc cagtcctgga ctgccgggcc cttcgatggc      180
agcgtcctgc acggcctccc aggccgcagg cccaccttcg tgtccgactt cttggaggag      240
ttcccggggtg agggtcgtga gtgtgtcaac tgcggggccc tgtccacacc gctgtggcgc      300
cgagatggca ccggccacta cctgtgcaat gcctgcggcc tctaccacaa gatgaatgg      359




        <210> 291
        <211> 954
        <212> DNA
        <213> Homo sapiens




        <400> 291
cccagatcat cgacatggtg cgttgtggtg gtggtacagc tgtggagtct tacctgtcac      60
agtgtcaaga aatgaagggg atgaacggaa ccaggtgctg acctgtatc tgtggatacg      120
gcaggagtgg acagatgcct acctacgatg ggaccccaat gcctatggtg gcctggatgc      180
catccgcatc cccagcagtc ttgtgtggcg gccagacatc gtactctata acaagtactg      240
cctatctggg cccctcctct ctcttacccc tctctagact tgcccttagc tgtggggggtg      300
tagtgatccc ctctccctac cacataacct ggttgccacg ctgccctgga agcttttccc      360
caggacccctt ctaagctgcc aagcactcag cccctccatg gcaccccac tttaggctat      420
cccaggccag cccaggctga acgtctcctc ggaacctact gtgtggtcca gggcagatgt      480
ctgaatcaca agggcctctc tagggcacac ttttagctct aagtctctca gggctccccc      540
aagagcctgt ctaagggtct ctttcctcca ggacatagcc ctctggaaca ctgctttatg      600
tctccttgac cagttccgtg tctcccagcc agcacatagc tctgcatatt ttctctgggg      660
cccttctaca agttttgcag atgtccccca agggaagtca ctgtgtgtcc cggagctacc      720
tctgggttct gcagaggcct ttttatacat cctctggcta cgtctgtgtc ccttctggcg      780
ccttcaggca ccaccccttc caggcctcga aaggcagcgg gtctctctag gtgcactcca      840
ccctctgtgt tgctttgttc tgaaaacaag aatcaaatta acgaaaaaaa aacaagcaca      900
agtttatttta tttatttgag acacagcctg ggcaagagag tgagacttca tctc           954
```

<210> 292
<211> 595
<212> DNA
<213> Homo sapiens

<400> 292
tacgcactga ctggtgcgtt ggttattgtc accgggatgg tgatgggaaa tatcgccgat   60
tatttcaatc tgcctgtttc cagtatgagt aataccttca ccttcctcaa cgccggcatt   120
ttaatctcta tcttcctcaa cgcctggctg atggaaatcg tcccgttgaa aacgcagtta   180
cgttttggct ttctcctgat ggtgctggcg gttgccggtt tgatgttcag ccacagcctg   240
gcgctgttct cggcggcgat gttcattctc ggggtggtca gcggcatcac catgtcgatt   300
ggtacattcc tggtaacaca aatgtatgaa gggcgtcagc gcggttcccg cctgttattt   360
accgactcct tcttcagtat ggctgggatg attttcccaa tgatcgccgc gtttctactg   420
gcgcgcagca ttgagtggta ctgggtttat gcctgcatcg ggctggtgta tgtcgctatt   480
tttattctga ccttcggctg tgagttcccg cgcctgtgca gccatgcgac taagttgggt   540
accgccagta gttatcccag tctggacgtt gtacagctac ggacattgaa tgcgt   595

<210> 293
<211> 552
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(552)
<223> n = a,t,c or g

<400> 293
tcttgaagag ccgctgctga tcaacaccag cttaagcaaa gaacagcgtc gggaaaaagc   60
cctgtcgatg atggcgaaag tcggcctgaa aaccgagcac tatgaccgct atccgcatat   120
gttctccggc ggtcagcgtc agcgtatcgc catcgcccgt ggtctgatgc tcgacccgga   180
tgtggtgatt gccgatgaac cggtttccgc gctggatgtt tcagtcgcg cgcaggtgct   240
gaatctgatg atggatttgc agcaggagtt ggggctgtct tatgtcttta tctcccacga   300
cctgtcggtg gtggagcaca ttgctgatga agtgatggtg atgtacctgg ccgctgcgt   360
ggagaaggga acgaaagacc aaatcttcaa taacccgcgc catccgtaca ctcaggcgct   420
actttccgcg acgccgcgcc tgaacccgga cgatcgccgc gagcgcatca agctcagcgg   480
tgaactacca agcccactga atccaccgcc gggttgcgcc ttcaacgccc gctgttgtcg   540
gcgnttcggc cc   552

<210> 294
<211> 426
<212> DNA
<213> Homo sapiens

<210> 294

```
tagcgccacc cttgaacggg tactaaatca ccctgacgaa acgcaagccc gacgcttaat       60
gacgctggaa gatatcgtca gtggttattc caatgtgttg atttccctgg cagatagtca      120
gggtaaaacg gtgtatcact cccccggtgc gccggatatc cgcgagttta cgcgtgacgc      180
cataccgat aaagacgctc agggtggcga ggtgtatctc ctttccggcc cgacgatgat       240
gatgccaggc cacggtcacg ggcatatgga acacagcaac tggcggatga ttaacttgcc      300
ggttggcccg ttggtggacg gcaaaccgat ttatacgctc tacatcgcgc tttcgatcga      360
ttttcatctt cattacataa atgatttgat gaataaactt attatgaccg catcggtaat      420
catcat                                                                 426
```

<210> 295
<211> 340
<212> DNA
<213> Homo sapiens

<400> 295

```
gggtgctggc gtatccgggg attaaagtct cgacggcaga agccagggct attttaccgg       60
cgcagtatcg ccgccaggat tgcattgcgc acgggcgaca tctggcaggc ttcattcacg      120
cctgctattc ccgtcagcct gagcttgccg cgaagctgat gaaagatgtt atcgctgaac      180
cctaccgtga acggttactg ccaggcttcc ggcaggcgcg gcaggcggtc gcggaaatcg      240
gcgcggtagc gagcggtatc tccggctccg gcccgacctt gttcgctctg tgtgacaagc      300
cggaaaccgc ccagcgcgtt gccgactggt tgggtaaaat                            340
```

<210> 296
<211> 281
<212> DNA
<213> Homo sapiens

<400> 296

```
cgggcagcag cagcgcgtgg cgctggcccg cgcgctgatc ctcaagccga aagtgctgct       60
gtttgatgag ccgttgagta acctcgacgc caacctgcgt cgcagcatgc gcgacaagat      120
ccgcgagttg caaaagcagt ttgatatcac ctcgctgtac gtcacccacg atcagagcga      180
agcctttgcg gtttctgata ctgtgctggt gatgaacaag gggcacatca tgcagatcgg      240
ctcaccgcag gatctccggg tacggagatt gaattggtaa t                         281
```

<210> 297
<211> 155
<212> DNA
<213> Homo sapiens

```
        <400> 297
tggcggtgca ttacctagag cgggtgagaa ttgccgaaca tgcgcataag tttcccggac      60
agatttcagg tggtcagcag caacgcgttg ccattgcgcg ttcgctgtgt atgaagccga     120
aaattatgtt gtttgatgag ccaacgtcgg cgctc                                155




        <210> 298
        <211> 217
        <212> DNA
        <213> Homo sapiens




        <400> 298
gctccctatg acgccgaaaa ttattttgat tatgacaatc tgaataacgg accttctttg      60
cagcactggt ttggcgtcga ttcactgggg cgtgacattt tcagccgtgt cctggttggt     120
gcgcaaatct cgctggcggc gggcgtgttt gccgtgttta tcggtgcggc gatcgggacg     180
ttgctgggct tgctcgctgg atattatgaa ggctggt                              217




        <210> 299
        <211> 568
        <212> DNA
        <213> Homo sapiens




        <400> 299
aggtattctg tctgatcgct gaccttgacc cgatcgatga gcttgtggac ttcccgatcg      60
tttacgcttc tgcgctgaac ggtatcgcgg gtctggacca cgaagatatg gcggaagaca     120
tgaccccgct gtaccaggcg attgttgacc acgttcctgc gccggacgtt gaccttgacg     180
gtccgttcca gatgcagatt tctcagctcg attacaacag ctatgttggc gttatcggca     240
ttggccgcat caagcgcggt aaagtgaagc cgaaccagca ggtcactatc atcgatagcg     300
aaggcaaaac ccgcaacgcg aaagtcggta aagtgctggg ccacctcggt ctggaacgta     360
tcgaaaccga tctggcggaa gctggcgata tcgttgcgat cacgggcctt ggcgaactga     420
acatttctga caccgtttgc gacacgcaaa cgttgaagc gctgccggca ctctccgttg      480
atgagccgac cgtttctatg ttcttctgcg ttaacacctc gccgttctgc ggtaaagaag     540
gtaagttcgt aacgtctcgt cagatcct                                        568




        <210> 300
        <211> 366
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 300
caaggcaccc gcgctgaatc tcaaggttcc tccaaagata aaacccgtct tgccttcgct      60
ggcctgaaat tcggtgacta cggctccatc gattacggcc gtaactacgg tgtagcatac     120
gacatcggtg cgtggactga cgtcctgcca gaattcggtg gtgacacttg gactcaaacc     180
gacgtgttca tgactcaacg tgcaactggt gttgcaacct atcgtaacaa cgacttcttt     240
ggtctggttg atggtctgaa ctttgctgct cagtaccaag gcaaaaacga tcgtagcgat     300
ttcgataact acactgaagg taacggccac ggcttcggtt tctctgctac ctatgaatac     360
gaaggg                                                              366
```


```
        <210> 301
        <211> 199
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 301
gcgataccta ttccgtttct attccgctgg gagccaccat caatatggcg ggcgcagcaa      60
tcactattac cgtgttgacg ctggctgcgg ttaatacgct gggtattccg gtcgatctgc     120
ccacggcgct gctgttgagc gtggtggctt ctctgtgtgc ctgtggcgca tccggcgtgg     180
cggggggggtc tctgctgct                                                199
```


```
        <210> 302
        <211> 140
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 302
gccaacgcgc agcaagggct gcccagtggt atcaccctga agctaaataa ccttgtcgat      60
aaaggcctgg ttgatcgtct gtatgcggcc tccagctcgg gcgttccggt taatctgctg     120
gttcgcggaa cgtgttcgct                                                140
```


```
        <210> 303
        <211> 441
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 303
cgcgcgaatg acgctcatcc ccggcacaca tctgctggaa aacatccaca acatctgggt      60
gaacggggta ggcacgaata gcgcgccgtt ctggcggatg ttgcttaaca gctttgtgat     120
```

```
ggcgttcagc attacgctcg gcaaaattac cgtctcgatg ctctcggcat ttgccattgt        180
ctggtttcgt tttccgctac gtaacctctt cttctggatg atttttatca ccctgatgct        240
gccggttgaa gtacgtatct tcccgacggt ggaagtcatc gccaacctgc agatgctcga        300
cagctacgcc ggtttaacgc tgccgctgat ggcctcggcg accgctactt tcctgttccg        360
caagttaaat atgtcggggc cggacaaggt ggtgccagcc gcgcggatct ccgggtacgg        420
acctagagtt cgtaagcaag a                                                   441
```

<210> 304
<211> 402
<212> DNA
<213> Homo sapiens

<400> 304
```
ctgtgcgaaa tgtttgcgtg atgcggatga atgcccctcc ggggcgtttg aacggattgg         60
tcgcgatatc agccttgacg ctctggaacg ggaagtgatg aaagatgaca ttttctttcg        120
cacgtccggc ggcggcgtca cgctttctgg cggcgaagtg ttaatgcagg cggagtttgc        180
tacccgtttt ttacagcgac tgcggctgtg gggtgtgtca tgcgccattg aaactgccgg        240
agacgcacca gccagcaagc tattaccgct ggcgaaattg tgcgatgaag tgttgttcga        300
tttaaaaatt atggacgcga ctcaggcgcg ggatgtggtg aagatgaacc tgccacgcgt        360
gctggagaat ctgcgtttgc tggtgagtga gggcgtcaac gt                           402
```

<210> 305
<211> 346
<212> DNA
<213> Homo sapiens

<400> 305
```
tacctgttat tgtttgtctg cttccttgtg atgtctctgc tggttgggct ggtgtacaaa         60
tttaccgccg aacgcgcggg caaacagtcg ctggatgatt tgatgaacag ttcgctgtat        120
ctgatgcgca gcgaattgcg tgagatcccc ccacacgact ggggtaaaac tctgaaagag        180
atggatttaa atctctcttt cgatctgcgt gtcgagccac tgagtaaata ccatcttgat        240
gatatttcca tgcaccgact gcgtggcggc gaaattgtcg ccctggacga tcagtacacg        300
tttttgcagc gtatcccgcg cagccactac gtgctggcag ttggtc                       346
```

<210> 306
<211> 207
<212> DNA
<213> Homo sapiens

<400> 306

```
gttgaattat tcctcagcga tgaaggcgat gatgtggtga ttgaagtcgc cgatcagggc     60
tgcggcgttc cagagtctct acgagacaaa atatttgagc aggggggtcag tacgcgtgct   120
gacgagcccg gtgaacatgg cattgggttg tacttgattg ccagctacgt aacgcgctgc   180
ggtggtgtta tcactctcga agataat                                        207
```

```
        <210> 307
        <211> 214
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 307
tcgacgccat tatcgccccc gatgccaacg ccctgcccgc tgccgcacaa gccgcagaaa     60
acttgaaaaa tgacaaagta gcgattgtcg gattcagtac gccaaatgtg atgcgcccgt   120
atgtagagcg cggcacggtg aaagaatttg gcctgtggga tgtggttcag caaggcaaaa   180
tatcagtgta tgtggcggat gcattacagt aaaa                                214
```

```
        <210> 308
        <211> 129
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 308
tacatcgtag tgacggggaa aacacattgc ggtacgccac ttactaccgt tacaggagac     60
gcaacgcaat cgggttatct gacgctgaac ctgcctgaaa tgtgggaagt gtcaggttat   120
aaccgtgtt                                                            129
```

```
        <210> 309
        <211> 358
        <212> DNA
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(358)
        <223> n = a,t,c or g
```

```
        <400> 309
gccggttttg ccgcatcaat ggtgcttagc gatgactcaa cgtaccagtg cgccgactgc     60
aaatctgccc gccgggccag taaggagtac cccagttcat caagaagctg gcttgccact   120
ttcggcaacg cgaccggatt aagcttcaat gactttgtct ggttatttgt aagtgcgctt   180
```

```
aaccgtgcct caataatttt cattttcccc gcgacatcgt tgagctgctg ccgggttttg      240
ctggcattaa tatcgggttc cacaccttca actgaagaag taatcccgtt ctgatatagc      300
tggcgatcgg tcgcgataat ggcgntctgc tcttttttcta tttgctgcaa gaccgtgg      358
```

```
        <210> 310
        <211> 253
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 310
tggcggcctt cctgagagaa tattgccgag gagtacgcga ctaaacgcta tcgttctaac      60
gtcatcaact gggggatgtt accgctgcaa atggcggaag taccaacctt tgaagtgggg      120
gattacattt acatccctgg cattaaagcg cgctggata atccggggtac gacgtttaaa      180
ggttatgtga tccatgaaga tgcgccggta acggaaatta cgctctatat ggaaagtcag      240
gaagccagaa cag                                                         253
```

```
        <210> 311
        <211> 304
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 311
gctgcaaact gaaattggca gcatggtcta tgcggtgaaa ccaggcgatg gttctgcgcg      60
tgaacaggcg gcgagctgcc agcgtgtgat tggcggtctg gcgaatattg ccgaggagta      120
cgcgactaaa cgctatcgtt ctaacgtcat caactggggg atgttaccgc tgcaaatggc      180
ggaagtacca acctttgaag tgggggatta catttacatc cttggcttta aagcggctaa      240
gtatagtccg ggcacggcgt ttacagtcta tgcgatctcc gggtacggac ctcgaatctg      300
ataa                                                                   304
```

```
        <210> 312
        <211> 344
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 312
actctagagg atctgctgat ggcgttagat ggagagcaac atcttcagca acaggtatcg      60
gaaaaagtat tagccgataa tgtgttaatt gcccctggtt ctgttaaacc tgatgcgaca      120
ttctggtcgg ccttaatcca ggatcgctat aacgtgatga cctgtattga aaaagacgcc      180
tgcgtcctgg tcgagcaaga tctgaatagt gatggtcagg cggagcggat cctgtttgct      240
tttaatgatg acagagtcat tgtctatggc tttgactcag acagaaaaga atgggacgcg      300
```

cttgatatga gtttacttcc gaacgaaata acgaaagaaa aatt   344

<210> 313
<211> 630
<212> DNA
<213> Homo sapiens

<400> 313

```
agagtcaaat agcagatgca ggaagatgcc aggtgaaaga tgccggggtg gcccagctcg        60
gctgtccctg ctgcttgacc tgcccactcg ccctcttccc cacccccgac aggtgattga       120
cttcggatcc gccagcattt tcagcgaggt gcgctacgtg aaggagccat acatccagtc       180
gcgcttctac cgggcccctg agatcctgct ggggctgccc ttctgcgaga aggtggacgt      .240
gtggtccctg ggctgcgtca tggatgagct gcacctgggc tggcctctct accccggcaa       300
caacgagtac gaccaggtgc gctacatctg cgaaacccag ggcctgccca agccacacct       360
gttgcacgcc gcctgcaagg cccaccactt cttcaagcgc aacccccacc ctgacgctgc   .     420
caacccctgg cagctcaagt cctcggctga ctacctggcc gagacgaagg tgcgcccatt       480
ggagcgccgc aagtatatgc tcaagtcgtt ggaccagatt gagacagtga atggtggcag       540
tgtggccagt cggctaacct tccctgaccg ggaggcgctg gcggagcacg ccgacctcaa       600
gagcatggtg gagctgataa gcgcctgctc                                        630
```

<210> 314
<211> 2285
<212> DNA
<213> Homo sapiens

<400> 314

```
cgccttgtaa agaaacgagt tgagtgtagg cagtgtggga aggccggcag gaaccagtca        60
acgctgaaga cgcacatgcg aagccacacg ggggagaaac cgtacgaatg cgatcactgt       120
ggtaaggcct tcagcatagg ctccaacctg aatgtgcaca ggcggatcca caccggggag       180
aagccctacg aatgccttgt ctgcggggaa gccttcagcg accactcatc cctcaggagc       240
cacgtgaaaa ctcaccgggg agagaagctc tttgtgtcat ccgtgtggaa aaggctccag       300
tgagcgcgcc tgctttagag acacaggatg attcagaccg gaaacagacc tcgtgggtgt .     360
aagaggaagc ctctgtgagc tcgcacctta ctgggtgcaa aagaatccac ggaacttggg       420
agaagtccag ttcctgtaaa aactgggaag acgaggcgtt ctcatcccat aggaggtttg       480
tgagaactca cgccgggggt gaaaatgtac gtctgtagca tggagaagcc ttcagggtac       540
attcagctct taacaaacac aggaggactt aatggcagct tggcatttaa tgtcaaaatc       600
caagccgtgg catttaatgt caaaatgact tcagaccact tctagccttc tgggcccatg       660
agtaataatg agcacactag ggagcatctc tgtaaacaca gtggctgggg aaacccttcc       720
tagtctcact tgattcctca tgacggaaat cacactaaag agagaaatca gtgaagtaag       780
gaacgtggaa ggtcatgaat gggccgcaaa ccacggccag ctgcttgtct ttgtatggct       840
tgccagctaa caatagtggt tccatcttta aggaagaaga atgtttgatg gagaaaattt       900
gtggccaatg aagtctgaaa tacttcctgt catctgcccc tttccagaaa aacttggccg       960
acccttggtc tacagcacgg gttctcagtc gggcgacgat ttggctgtgt aggcgtcatt      1020
tggcaatgtc tagagacatt tttggtagtt agaatggggg gaagatactc ctgacttgta      1080
ataagaagac atcagagatg ctgctaagtc ggctccagca cacaggagcc ccccacaacg      1140
aagagttagt gcccccaaac gtcactgttg ctgaggttga aaataatcat gcagtcattc      1200
ctcaattact gcctccagca attcctccat ttttatgaat cttgtgagca cttacgctag      1260
gagaaatttc ttttacaaaa ctttttaaaat acagttagtg ctgataattc ctatgtggaa      1320
```

```
atgattccag ccatggtccc ctcacttgag catgtgaata ttctcacgga gagaagcccc    1380
agcgagattt tccggtgaat acgggattgc acttactctt tcatcacgga aacagacccc    1440
cgagagaagc cccaacgaga ttttccggtg aatacgggac tgcacgtact ctatcatcat    1500
gaaaacagag ccccgttcat aaattttca tctttatttt taaggttata ctcctctaaa     1560
taacccttaa gcctcatcaa gaaaggtttg tttatagtat ttttactata gcttcatcct    1620
tgataacgtc ctaatttcct tctggacaac ctccttgacc aatggcatat tgagatctat    1680
gtgacatgag gatatttctc agtaccactt tgttactggt acctgatgca cacggattgc    1740
gaccagagca tgatgcctcc atcaagtggt aatatgtttg cagcctgctg tccagccaag    .1800
agtgacagat acttctagtg acttccccgg tatccactct catcttcttc caatatcaag    .1860
agaatccagg ttctgtcaga ttagtaaggt gtgctaatct aaattttaaa aaatctctta    1920
caggttttct tgcagctggt accatccatg tctcacagcc ctggccactg acagatcagc    1980
agatgtcacc acatgggctt ctgagaaagc tcttgaatgg ggatcgttct taaacatgaa    2040
ttcctccctg tatgttttgt tctttgcttt acttttcacc ttgcaaagag atccagtacc    2100
tagtattgga agatccacct taacgaccgt gcatatgaaa accacagtct aaggaagtga    2160
ctgcagaaag ctcacagcga ccctggcctc ccctgtggcc tctttgagtg tctgcagcag    2220
ccctggactt ccagacttct atcacatgag aaaaaataaa actgattatt ggtttaaaaa    2280
aaaaa                                                               2285
```

<210> 315
<211> 1316
<212> DNA
<213> Homo sapiens

<400> 315

```
ggctgtctat cagtggataa ggtggggggct gtctatcagg ggagaaggtg ggggctgtct    60
atcagtggag aaggtggggg ctgtctgtca gtggagatgg tggggctgt ctgtcagtgg     120
agatggtggg ggctgtctgt cggtggagat ggtggggget gtctgtcggt gtagatggtg    180
ggggctgtct gtcggtggag atggtggggg ctgtctgtcg gtggagatgg tggggctgt     240
ctgtcggtgg agaaggtgga agcttgtact cagagcaggg gatatttaga cttgaagggg     300
ccagggagga aggtactggt tctactaagc cccatgttca ctgggcagcc actaagttag     360
ggaccgtgtg tgtaccgagt ggattccgac aaagaagctg tctcaggagc cccagccagc     420
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ccgggagccg gaggttgcag tgagccgaga tcgtgccatt gcactccagc ctgggcaaca    1260
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<210> 316
<211> 2486
<212> DNA
<213> Homo sapiens

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ccggggcccc accccaggcc tgagaactcc tcctgggatg gggagaagtt atgagagggg      180
gaaatacggg gatgaatggg gtggctcccc agcggctccc cacttttcta ttacgagaga      240
aaaaagcaca aatgagaaag tgggggagag gtgatggaca gctgacagct aagctggagg      300
aggggcgccc aggatggggg aggcggaagc tggtgggtga gtaaaacagg cagcccctcc      360
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cctttgcag ggatgccctc cccactcagc tgagggaagg ctggacgtta aaatctagcg      480
gagaataaaa ttaaggagtt ggggggaaac gctgctggga ggaaagactt gggcttgggg      540
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tccctggata caccagcaag acctggtctg actggagttg agaaactcgt ttaaaacagg     1140
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ttaagaaaat cttctttggc tttggctaag aattctttca cgctctcctg ctcgctgccc     2460
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        <211> 867
        <212> DNA
        <213> Homo sapiens
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aactttaata taagcattaa tttgtttgaa atataaagta ttataaaata ttgtaattaa      120
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gcttacagat aattttaaa atatatacat tatgactaat ataccaaaat tatttatatg    180
tacacattta tatttaatac ccaaagaaaa tttactacca cattgctaca gtagatatta    240
acctgacatg tttattaatt gatcctatag gtataattat aggtcagcat aattttacag    300
tctattcttt tatttacta aattaggaat gccactattc ccggacaaat aaatgcaggt    360
gatgtggcca cccaagaatc atagtagctc ttcagttagc tatcttgcaa tctctgatat    420
aattctacta tgtgaataga gtgaattcca attcttcatc aaaaagtgct ggtggaggtt    480
gtcaggtgtg ttccagtata gattcccaat ccaacggccg gcagatggga gagcagcaga    540
gatggaaatt gtgctcagaa taagccctct ttctcataat acttgtattt ctcatgctga    600
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aatttgacca atgttacatg taatctgaat tagtctgtaa gattctttca acctcttttc    720
ttctctcaat acggttttac tcagactgag agctgtcttt ctcttcaatg ctttgggaat    780
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gtcaccgtga gaactcctgg agctgct                                        867
```


        <210> 318
        <211> 1683
        <212> DNA
        <213> Homo sapiens

        <400> 318
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tggtatcacc aagccctggg agaaatgtgt atagaaacac cccacggtgg tgaaacaggg    180
aaaatgggtc atttactgag caagtcccat ttgtgctttc agtatcacat aatcatttaa    240
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ggcagtaaga gaaacctttc aaggaaataa tgtacctggg tatcagagga cctaagacct    360
aagttctagt tctagctctg ctataaacaa gtcttgagat tctggtaaaa gaaaggtctg    420
gataagatga ccctttaaa gtgctttaca atttaaaaat tcttgatatt cttagtagga    480
tgaagccata ttatcccaca agtgcttgcc tgaatttctt ttttaagggt ccaattttag    540
tagacattcc attcctcctt agagaagaac attcttcaac cctgcagatg acggagggct    600
aatctgcctt cccctgcttc tctaaccttc tgttccactc cttgccccac agtattttc    660
tgacctaaga aacagtattg tgaacagcca gccaccggag aagcagcagg ccatgcacct    720
gtgttttgag aacctgatgg aaggcatcga gcgaaatctt cttacgaaaa acagagacag    780
gtgagtataa agcgtcctgc ctagaaatct cagacaattg ctattttca aatcaacgaa    840
acaggcagtt gctttaaagt ctttgacatc tgtgtttgga ggccatctaa agcaatgcaa    900
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ctcagttcat acgtttcat cagaaatact tgatctgtat ttagattca taaatttaca   1140
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cctcagggcc ccagatttga ccagatctct aagccaactt ttctcttaga gtcttaagac   1620
tgaaattaac tgatctttga aacagaaccc atcaattcat acattctact tcccatgctt   1680
taa                                                                   1683
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        <210> 319
        <211> 1606
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<212> DNA
<213> Homo sapiens


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tgatctactt ttaccagatt taacagatcc ttgaatttac tttactgtat atacttcctt       180
cttgctcaca ttgggaatca aactaatgct ggaaacatgc atcttcagac ttcattgagg       240
aattccagat tgagacacgc tgggatgtgg attgagtcca tggttagaga agatggatta       300
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cgctcttgta gttgtgcctg gattgttcgt ataaaggcca ctgttacccg ttcttcaaat       420
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tgctggtaga tctgaatgga aaggtcacgt caggcacctg acggtattcg gtgaggtcaa      1020
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ccgctgtact gcttcagaca gtgaagaagg cgggcaggtg ttggataacc agaatgacgt      1140
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gctttttgag cttcctctca ttcttttcca gcttttctac cagttcttta aggtccagat      1560
tctcgttggt cagccgggat atttcctgct gaacgccgct cgtgcc                     1606


<210> 320
<211> 676
<212> DNA
<213> Homo sapiens


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tagcatttag cagcaggttt ggaacgtaga gaatctgaat ggatctgatg aaacctgaac       360
caggtgctta ttttgttgct tttttcccat ccactgagca tgacagcatg gattctcttt       420
aaggagaaac catgggcagc tccagccagg cctcatagga aaaggcccgg catgaggttc       480
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ttcagatgaa gattgtggac ttgaaaatac agactagaag gccgggcaca gtggctcatg       660
cctgtaatct cagcac                                                       676


137

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        <210> 321
        <211> 1502
        <212> DNA
        <213> Homo sapiens




        <400> 321
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        tagactttct agcaacttat aaatttctat tataataata aattgatact ttgagccaag   120
        aaaacaatat aaccaaaaat tcatttgttc cctttgttta ggggtgtttt acatttatgc   180
        ataattttgc ttttataaaa gatgattgtt acaatcaggt atacaactac ttggttatgt   240
        ctaagttctg tctcttaaaa tatgttcttt tagagaattc atttaatcat cttattcttt   300
        tcttcaattt tctccaaaca gtggtagaag tactatttga tagacagaat aaagaaaatt   360
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        tcaactctaa ctcgtgaagc gggcctggtt tagaaagtaa caatgaggta gtaactcatg   480
        atagtgctag ctgttatcaa aaattaacaa ctttaggtat ttttgttttg ggttttttgcg   540
        gtttaggtac atccaaaatt tcttcatagt ctgcactcat tcccttttgcc cagcgaccaa   600
        ctgtgaccat tcgctctgaa ttctgacttt cagggcaatc tttctttaaa tgttccacag   660
        agccacaaag tttgcaaccg ccaccatcag catagagtcc tttgggatta tcaggacaag   720
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        gaccaggttt tctacaatgg aaacacacca ttgcattttt ctttgccgct tgtcttttta   960
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        cctcactgtc tgttgctata atttgcccat tgtgaaccat ctgtgaattc tgtcttaggt  1080
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        aacaaaacta aagagacatg ctatatcact atatgtcaca tatgcccata tgttaaactt  1440
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        at                                                                 1502
                                                                           1502




        <210> 322
        <211> 989
        <212> DNA
        <213> Homo sapiens




        <400> 322
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        acaggcgcac gccaccaggc ccggctaatt tttttttttt gtattttag tagaaacggg   180
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        ttgggagtga gaccacatta catttaaata tatttacaat gttttctgct ctattcttta   360
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        tccctgtcta caatttaaat tgggatcttc tatattctag ttattatttg taaataagaa   480
        aactactgac tttttttctag tatattttct cagaatagga ttttctattt ttctataaaa   540
        tgaccaatgt tatgaagctt cgtaagtttt gtcaaagtga tacacacata cagcaaaaaa   600
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tcaaatagta cagaagtata aaagcaacaa cctctgcctt gccccttctc caccttcagg   660
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<210> 323
<211> 1106
<212> DNA
<213> Homo sapiens

<400> 323
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gaagagccag ccacacctgc ttacacaata agtgccactg agctgctaga aaagcaggcc   480
acaccaagag agcctgagct gctgtatcaa aatattgctg agcgagtcaa ggaacttccc   540
agcgcaggcc tagtccacta taactttgt accttaccta aaagggcagt ttgccccttc   600
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<210> 324
<211> 2366
<212> DNA
<213> Homo sapiens

<400> 324
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gacgagtggg aggtgctgct gatctccctg cagggcacag cgccattcct gcatgtgggg   180
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ttccggaagg ccctcgagca gaagctgtac gggctccagg ctgacattac catcagcctg   480
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gacggcgtgc ccttcctcat gcatgacacc accctgcggc gcaccaccaa cgtggaggag   540
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<210> 325
<211> 1925
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1925)
<223> n = a,t,c or g

<400> 325
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gagcagggaa gcacagccac tgctatagaa attttttaggt aagtctggtg ctagcattat   180
tctacaaaac tgtttacacc cattataaat aggggacagt tcttattgct cctggagctt   240
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gatttccaaa tttacaaaaa gtcattacca atgcatcact ttttgattaa tttctgattg   360
ccatatagat atggactaca gtatgcatgt ccttgacacc aagtacagaa aaaaagctta   420
gaaagtcgt tttatcaaag ttcagttcaa tgagaaacat gaaaaagtgc aaaatatgta   480
caattcctgg cagttctcac acgggatttt tttgactaca gaccataaaa gtttacattt   540
gtgtaatgaa atgacgatgg atttcacatc actgttaata tacaagtttt tgcttcaaag   600
tgcttacttt atttataaaa gagaagatca agagggttgc aggaattttt ttttttaac   660
aacaaatcaa tggtatgtgt cccaatctcc ttcttcctct tcctttagtg caacatggcg   720
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cagcagcctc atggataagg tctgatttca aaagacattc ctgaaacctc acctacagca      780
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ttcgagattt tactactttc attctcacct caaaaacttc atgaatggcc ttccggaagc      900
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tattagtgct ctccaagaac agagtttcgt tgggagacat tttgtgaaag acaactttct     1740
gaatagacga cttgccgctt ctcctcaggc ccatgagcag gattctcggc ttcacttcag     1800
tgctgaaggg gtcactgaag tccagaactc cctcctctgt gccgctgtcc ggatcggcgt     1860
cggaggagtc gggcccgtct ccgtagtccg ctgaattccn ccgcngtgac tgagtctcat     1920
tccca                                                                  1925
```

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        <210> 326
        <211> 1181
        <212> DNA
        <213> Homo sapiens
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        <400> 326
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        caccagaccc tgtcattcca tcactagggg gtaattccag gctccccctg ccagccctga      180
        gacaggagga cggatgtgaa gttgcccagg actagattct gtctctccaa agtggcccaa      240
        gccctgttct ctgtactagg gaagccagct gtgtcttttc gaggacagtt ggtccagcca      300
        gcaggctcag ttcagatacc agacaaccat tccagcacga gggctcagcg ccctggcccc      360
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        tcgtccagct ccggagcttc ctccttgccc ggcccatcct cagggcctgg tttgaggccc      480
        tcagaggctg gtgcccaaag ttcattgtca tacatagagg tgtcaatatc ctcaaacagg      540
        ccctcaagcc catcgtccag tagacagcca gtggctgggc ccagcaggtc caaggcaccc      600
        aggctgggcg ctgctccccc gatgctacgg cctggtggcc cctcgtctgc caagggttgg      660
        ggagcctgac tcaggccctc aatgtggctg aggtcctcca ggaggctggc catggaggct      720
        gaaagggcag cgtccgagct tgccagtaag ttgtcagcca cactgggggc tgcaggtggg      780
        ctaggcacag gtggcagggc agccgcgggt gccatggacg cctggatgcg ccgcagagtg      840
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        gctgcgtggc caggatctag ccaccaggag tcgactgcca gaggttcctt ctcctcctcc     1020
        tcctcccgtt tccgcttcag acccttgctc agcatcttgc tcactagcgg ccaatcagaa     1080
        cgaagaggta gccacccaca accaatcagg aaacggcggc ggcagcatcg cttgttggct     1140
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        <210> 327
        <211> 1842
        <212> DNA
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<213> Homo sapiens

<400> 327
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aatttctatg gcaaaaggat taaccaaggc atatcatagg aaatccactt tgcccaatat   180
aagcagttct cagcacatac tcaaatgcac acaaacatga aaatcggaaa taaaggaatg   240
ttaaaaaaat aacttaggca gacacaaata aaaccacccc actagtgtat gaatgatgcc   300
acgtttctta tgatcttaat tacatttaag gatttaaaaa atgccactga tctcacagtt   360
tacaatatcc aaatcttcaa acctgctgga agaagtccca cagcacagcc tggaaattcg   420
catccgttgc attctctcgt gcagttacct gcttatgggc tgtaccttct gccttgatat   480
gtagtcagtt cttcctgaag gatggaagct ctcttttgca gaaaattaac ctgtgatttt   540
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tttgtttcat attcttgtcg tatgtaagtt atctgttcct gtgactccaa ttctttgtgt   660
tgtaattttt tctctgcaca tcgcacctga ttagaacggt tttctaattc atcttgtaaa   720
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ctaacatcct ggagccgcct ttctgcagca agctgctgct ggctgttctc ttctttcaga   840
gaggaaatgg ttgtctgaag ttctgctatg atctgtgaag atttggcaag cttctgagtg   900
tattccttct caatctgctt cagcttgctg ttggcctttt ccagtgtcat ctctgtctca   960
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tctaccagct gctgtttccg ctgtgagttc acattgatca attcttctct caacttgtga  1140
acctgggcct ccatgtcggc aataacctgt gcatctcgtt tcttgaactc ctgaatttga  1200
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cttttccttt atcaagttca ctctgcaagt catgagcctt ttttttcatag atgtgtttta  1560
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catatttggt ttgtaacagt ttcatgtttt gctcataatc atttacaaga tggtccttct  1800
ctttatgcag tgtgttacgc cttgccttta cttcttgtaa tt                     1842
```


<210> 328
<211> 1293
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1293)
<223> n = a,t,c or g

<400> 328
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gggagaccag tcctcaccaa cccttggatg ggctcccaag gttgtgcaga agatgctcca   180
gtcaaaagga tagagacatt tgggaaataa aggctgtccc caaagttggg gggaangtcc   240
acggcctggg agtggatagc ctacatggtg gccccagggg gtctgagaga ccagtcccat   300
gtccctgggc gagtccttca gcctgggtgg ccctagagga aagccttcgc gggcggaaac   360
```

```
tgttccctgg aggagggcgc ggtactggtc aaaatccttc ctttccacac gggtgacgcc   420
gccttcctta gcatacccac aacttcccgg cacaccagcc ttgataaagc gcttcattcg   480
tgggacacca gaatcacacc aacccctgaa attgtttgaa ggcaaggccc cagagcctca   540
atggctctcc catgtccaag gtgggtttgt gggttcatcc cagaatgtag aaagttgggg   600
cagggcaata gtccatctga gcaaaaggcc acttcggctt ctttctggcc cccaagacag   660
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cagcatggta gacttcccag ccccattctc tccaaccaca cagatgcgag actcgagatc   960
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atttattact taaaaaaata acttcctaca cgagtaatat atgttcagag aaaacttaga  1200
aagggcttgt actcctacca ctcaggtatc attactttag agtccattct tctcatttac  1260
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<210> 329
<211> 1734
<212> DNA
<213> Homo sapiens

<400> 329
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ttctaagggc aatacagcca aaaatggtgg cttgcttctc agtaccaata tgaagtgggt   180
acagttttca aacctacacg ttgatgttcc aaaggatttg accaaacctg tggtaacaat   240
ctctgatgaa ccagacatat tatataagcg cctctcggtt ttggtgaaag gtcacgataa   300
ggctgtattg gacagttatg aatattttgc tgtgcttgct gctaaagaac ttggtatctc   360
tattaaagta catgaacctc caaggaaaat agagcgattt actcttctcc aatcagtgca   420
tatttacaag aagcacagag ttcagtatga aatgagaaca ctttacagat gtttagagtt   480
agaacatcta actggaagca cagcagatgt ctacttggaa tatattcagc gaaacttacc   540
tgaagggtt gccatggaag taacaaagtt ttgtttcttt atttttttag acacaattag   600
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caaaccactt tgactgaaag cagaaagagt gaaaattcta ttttgttacg ctactggtgt   960
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agattgagca gttaaagttt ttgctatttta cctttgtgca ggctggcata tgctaatttg  1140
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ggctgaggca ggagaatcgc gtgaacccgg gccggtgga ggctgcagtg agacgagatc  1680
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143

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<210> 330
<211> 2105
<212> DNA
<213> Homo sapiens


<400> 330
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acaagtacca gagaggggtg aacaggcata tctgctagct ctcctcttgc agtcctcagc   180
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aagtc                                                              2105


<210> 331
<211> 5654
<212> DNA
<213> Homo sapiens


<400> 331
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<210> 332
<211> 283
<212> DNA
<213> Homo sapiens
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gattcattta gcacacattg gaccacgata ggccctgctg acatgttttt ttcattgtag      180
acagcattat aagaacttta aatctcacgg cacaaacccc tcgaagtctg tctgggcaca      240
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```

```
<210> 333
<211> 1759
<212> DNA
<213> Homo sapiens
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<400> 333
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<210> 334
<211> 2852
<212> DNA
<213> Homo sapiens
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cgggccgaga atatcatcag caagacacat cagtaccaca agatccaggt gtggccctcc  1140
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147

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<210> 335
<211> 865
<212> DNA
<213> Homo sapiens

<400> 335
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        <212> DNA
        <213> Homo sapiens




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```
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        <211> 4280
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
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        <223> n = a,t,c or g




        <400> 337
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<210> 338
<211> 1796
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<212> DNA
<213> Homo sapiens

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<210> 339
<211> 1771
<212> DNA
<213> Homo sapiens

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cggcagcagc caaccagcac cacctcctcc cggaagagta agcagcacct gtattgcggc     1740
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<210> 340
<211> 2725
<212> DNA
<213> Homo sapiens

<400> 340

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agaagaaggg gatggagcct ggtgccctga gattccagtg gaacctgatg acctgaagga      180
gtttctgcag attgacttgc acaccctcca tttatcact ctggtgggga cccaggggcg        240
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<210> 341
<211> 916
<212> DNA
<213> Homo sapiens
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ccacctccac ccacttgggc tggggcccg agagtccggg cagagctgga gagtgggcct    780
cggcctccgt cacatacagt gtgggcacca cgggcttctg gcctggttct gcctccggcc   840
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<211> 860
<212> DNA
<213> Homo sapiens
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<210> 343
<211> 3658
<212> DNA
<213> Homo sapiens

<220>
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<223> n = a,t,c or g

<400> 343

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atggtggcgt ccgacaggga cttcttatgg ccgtacctca agccctccgc ctcctccggc   1860
```

```
ccttctcgct gtgtcctctc ggtgaaaacg ctggggctgg gagcccaccg agacggctcg   1920
cggcgcccac ctctgccgcc gacgcggata gggtgcgctc cttgagccgc aggccctcca   1980
ggccgtggct gagcccggcc acctcgatgc tgttccgttt gtgcagctgc gcgtggcgcg   2040
cggcggtgag gggctcgctg acctcctgca gcgagtgcgc cacgggcagg ctgtcctcct   2100
ggaacgtttg caccgagtgg tgcacgcgcc gcgtgatgag gtcggggttg ctgctgctga   2160
tgtaaaggtg gcgggacagg tctggcgtgc tgttggcggg cctggggggc gggtagggtg   2220
ggggtggccg gtacacctgc gtccgcatga tgttgggaga cgggtagtcc tgcgcctgca   2280
gctgcgcatt ggtcagctcc ggcacgctga ccgcgcccac cacgggccgc cgctcggcag   2340
ggtaggggta gggagacggg ctgtggaagc tgtagctcag gctgaacggg cagtgtgcgg   2400
ccgctggcga ggggagctgt gcgtgctcgc ggatctcggg ctggctgtag accagcgccg   2460
cgggcctgct gtaggcgtac gagctgccga tgttgaggtt tcgcagcgag tggctctgcc   2520
gttccgcatg caccaggccc ctgttgagct gcttcatcac agtctcatag tctggggtgg   2580
ggcggtagga cggggggtatc acggcgctgt gccgatggga cgggaggtag tcaggcctca   2640
tgacgtcact cccggtgatg ctagggttgg acgacatcgg cgagggctgc aagtagggct   2700
gaggattatt taaggagttg gtgctggtg cactgtagac actggcattt acggatccga   2760
ccgttgaagt caatctgggc tctattcaag cttgtctgaa attgaccata gtatcccttc   2820
ctggttgggc acaaagaggt tatcttggga agaagcatat ggttctgtat aatgtccatt   2880
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tgtacagcat ttcagcatca ggagctgtga gccctctgta tttctgatgt agtaaggcca   3360
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cagctaagcc tgctaggtga attggctgtt ccaaggtaca agggatacct tcttcccaga   3540
tatccttcct cagttgcaga taatactggt acccggtaat cctctgctgg aagcgaggaa   3600
cctgaggcgc ttaaaccccc attccaaaat agacggtagg ttccaaggcg ttttttc      3658
```

```
        <210> 344
        <211> 419
        <212> DNA
        <213> Homo sapiens




        <400> 344
aataaagaaa gaaacagaag ctggccgagg agtgagttga gctttccaag ttagctgacc     60
ttaaagatgc tgaagctgtc cagaaattct tcctggaaga gatatagctt tggtgaagag    120
atcctagcta aaggtgtaga ccacctgaca aatccaagtg ctgtgtgtgg acagccacag    180
tggttactgc aagtgttaca acaaactctt ccactaccag tgatccagat gcttctgaca    240
aagcccctac cagttaatca gagacttgta agtgctggcg cttggccaaa gacgatgtgg    300
aatgagaaac aaatgtcaac ataataaaat ctcagttaaa atacttgaaa aattcttaac    360
ttggtagttg agcagaaggg caaatatgct tgttatgaac tattctacat tgaaatcta     419




        <210> 345
        <211> 1253
        <212> DNA
        <213> Homo sapiens
```

155

```
<400> 345
ggaattcctc tgtcccgcca tacacagggt gggacggggc agggcgggca ttgagctttg    60
tgtcctgggg tcagggtgct tcccctgccg gcctcacccc accaagcgga tctcatggtg   120
ctcctctggc tgggcccacc cgcagtggta tccttctggg ggcccttatg ggagcctgcc   180
gggggtgcag atcctgccgg gggtgcagag cctgctgggg gtgcagatga tttctgggtc   240
ccaggaccat gagggggctg ctctacacac agccggaaga tgctgcggac ccaaactggc   300
cctttccctc ccacaccacc ccaggaccaa tgggctggct ggaggccacc catgctaaaa   360
taggctcaag ggcctacttt agcttctggg caaaggtctt ggcctgggcc tgactctgtg   420
gccttcctga gctgcctccc cagtaggcct cagtgctggg ctacaggcct cctccattcc   480
ctccattcat gtgaccccac ccctcccagc agaaactctc ttccgtagcc caggagcagc   540
tgttgagggt ttcacctgcc catgccccag cctaaggccg gcttccccag agcagacggg   600
ttgcactctc ctgcccctca ggcccactct gtcatccaac aagctcactg caactggccc   660
atcttaaaaa caacaccggc tggtcacgct ggctcacacc tgtaatccca gcgctgtggg   720
aggccggggc gggggatca cttaaagtca ggagtttaag accagcctgg gcaacatggt   780
gaaaccccgag ctccactaaa aacacaaaaa caaattaagg caccctgagt ggtggtgggt   840
gcctgtggtc ccagcgactc gggaggctga ggcagaattg cttgagccca ggaggtggag   900
gctgcagtga gccacgatcg catcacgcac tccagcccgg gcaacctggc aagaccctga   960
ctctaaaaag aaaaaaacaa caaaaaaaaa aagcccacgt tcaagggcag cactattcaa  1020
aagagggaag caactcagga atccaaacgc gcaggaggga acacatcggg gttcatccac  1080
aggggaacac gattcacccа aaaaaaggaa ggaaaccggc ccggccccgg gacttgaatg  1140
cacctggagg agactgtgat gaacaaaagc acccaaaccc aaaagggcag ggacggggtg  1200
atctgactga ggtgaggacc ccagccagcc aaattcatgg agacagaaag aag          1253
```

```
<210> 346
<211> 807
<212> DNA
<213> Homo sapiens
```

```
<400> 346
tttcgtcgga ggcgggcgcg ggcgcgtccc tgtggccagt cacccggagg agttggtcgc    60
acaattatga aagactcggc ttctgctgct agcgccggag ctgagttagt tctgagaagg   120
tttccctggg cgttccttgt ccggcggcct ctgctgccgc ctccggagac gcttcccgat   180
agatggctac aggccgcgga ggaggaggag gtggagttgc tgcccttccg gagtccgccc   240
cgtgaggaga atgtcccaga aatcctggat agaaagcact ttgaccaaga gggaatgtgt   300
atatattata ccaagttcca aggaccctca cagatgcctt ccaggatgtc aaatttgtca   360
gcaactcgtc agacggggtt tcactgtgtt agccaggatg gtctcgatct cctgacctcg   420
tgatccaccc gcctcggctt cccaaagtgc tgggattaca ggcgtgagcc accacgcccg   480
gccaatattt tgtaattttt agtagagatg gggtttcact atgttggcca ggctagtctt   540
aaactcctgt cctcgtgatc ctcccacctc ggcctcccaa agtgctgaga ttacaggtgt   600
gagccactgc atccagccaa taatatgctc tttaacaaac aatggatcaa aggagaaatc   660
acaagggaaa tagaaaaata cttaaaaatg aatgaacatg aaagaaaaca taccaaacgt   720
atgggaaaca gtgaaaacag tgcaaacgag gcaatttata gctatacacc attaaattta   780
aagataagaa agacgtcaaa ccaacaa                                        807
```

```
<210> 347
<211> 918
<212> DNA
<213> Homo sapiens
```

```
       <400> 347
tttttttttt ttagaatata tttcatttta ttataaagca gtgctcccaa acttttcaca      60
gcgtacacct cgagggtgga gaactaacat ccaagcacac ctggatggtg gatgggaccc     120
acttctgggt aacctgatga ggaagctcta gtgaagaaat tcaggacgcg gtcttcagag     180
cagagggctt ggttcaagtc cctgttctgc cacttactaa ctgcatgacc ttgagcaagc     240
cacttaattt ctctgctcct tctctgtgaa atgggtacaa tgtggtcagc agtaaaggaa     300
ctaatacatg tacagcactc agcacaaagc ctggcacaca gcaggctctc accaggtgcc     360
attctcagca caactgcttg gttgagctac tgtggcagtg gcaggttgtg ccccaagggg     420
gtgggctcag gagcccgtgc agcaagaggc agtgaccaag gaggcagggg acaatagccc     480
tatctttttca ggatctctgc cttggacctg gagaatggag agactttgct cctatcacgt     540
cccaagttgg gaaaactaag gacgaagccg gtgactgaca tctgaaatgg aatcctctgc     600
atctccaagt ggccctatac ctgacaatat cattactagt gaaaaccaag tgacaaacac     660
actcctcgac cccaagttct tccacatgtc ccattgagga gagcacagcc aataacgcag     720
agtgtattta tgcgcagggc tggctaaaca ggctggctac gagtccggaa cagtgtcagg     780
atctggcttc ccattggccg acatgacaga atccttctcg cgttgctctc tgatgtactg     840
gtccaacagg gtggtcagct ggaggggctg gtgctggagc agggagtggg tctgggctgt     900
gaggcaggtg gagttctg                                                   918
```

```
       <210> 348
       <211> 1893
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 348
ctgaatccat ggaaaaacgc tttacaggac ttctgcttac cttttctcag aatcaccagc      60
cttcttcagc accacctttt tggggaagat ttacctagct gccaggaaga agaagaattt     120
tcagttcttg ccagctgcct gggacttctg ccaacgtttt accaaacaga acatccattc     180
atcagtgcct cctgtctgga ttggccagtt ccagcatttg atattataac tcattggtgt     240
tttgagataa aatcatttac tgaaagacat gcagaacaag gaaaggcctt gcttatccaa     300
gagtcaaaat ggaaattacc acacctacta cagttgcctg agaattataa caccattttt     360
cagtactacc acagaaaaac ctgtagtgtc tgcaccaagg ttcctaaaga tcctgctgtt     420
tgccttgtgt gtggtacttt tgtatgcctg aaaggacttt gctgcaagca acaaagttac     480
tgtgaatgtg tactgcactc tcagaactgt ggtgcaggaa caggtatttt ccttttgatc     540
aatgcatcgg taattatcat cattcgaggt caccgcttct gcctctgggg ttccgtgtat     600
ttggatgctc atggagagga agaccgggat cttaggcgag gcaaacctct ctacatttgt     660
aaggaaagat acaaagttct tgagcaacag tggatttctc atacttttga tcacatcaat     720
aaaagatggg gtccacatta caatgggctg tgactctcca cctcagcatt gcatcgtatc     780
atcattttcg ctacgaattt attttcaac aataagcttt aacttaattt ggggattaa     840
cacttttgct gagggagaaa aagaaaacat acattatgaa gcctttccaa aattaggtgc     900
ttggtaatca cgttaatggt ataatttttt tttttttaata tctggagaac attaataaca     960
agttaaatta ttctttagtg gtcatttttt aagtgcacaa ttaataagaa gcacaacttg    1020
ttcacaaact cattcagaaa tgattctccc aacaatgcat atcagctatt cattgatact    1080
tagagtgggt gtgatttatt tgacatttta ctgcttcttt ctgtctgtgt gttttaattt    1140
gcatctgcca agcataatgc atctttttttc ctctgccatt cttgtgttga ttggagaatt    1200
tttctgtatg taattagaaa aaaatgtaaa acatgattta tgtgaaatac tgtatagtaa    1260
aagttggtct aatagtagaa ctttaaaatt ttttcttatt gtgaggaatc tgttaaaagt    1320
ttaaagcttt gctgaaaact gaattcattc tcaggaattt cataaatctt ctccccaggt    1380
aaataattga aatagctgta aataagtag atagctgctg ttaatataat acagtacatt    1440
ttggggggca tatgtgtggt tggggggtcc ttaaaaatca aaatttgcca tttcagttgg    1500
atgaattact agaggtaata acaaatctta ctataaaatc aagaggttta agaacataca    1560
ctgggcagat gttgattccg tgcatgccca cctttttatta ccaaacaagg ttttgtttat    1620
atgattgtat tagaaatgct cagacttccc cagaaatgaa ccataaattt tggaacttcc    1680
tttcagctca agaggttcag ctatattgta tttgtgcagt ggtaatcact acctattttct    1740
```

```
ggctcgggtt tccctaaaag gaaaaaaaag gcggcagtgg gtgatgaccc tcatggaatg    1800
agccacgctt cctgcattcc tccttaggaa ctggctgtgg aaaaccaatt tatggtttgc    1860
aggggtttaa aaatccagta aaaatggggg atg                                 1893
```

<210> 349
<211> 1433
<212> DNA
<213> Homo sapiens

<400> 349
```
gcaaggggca gttggtgaac ttgctgcctc cagagaattt tccctggtgt ggaggcagcc      60
agggacccag gatgctccgg acctgttacg tgctctgttc ccaagctggt ccccgctcca     120
ggggctggca gtccctgagc tttgatggcg gggccttcca ccttaagggc acaggagagc     180
tgacacgggc cttgctggtt ctccggctgt gtgcctggcc cccactcgtc actcacgggc     240
tgttgctcca ggcctggtct cggcgactcc tgggctcccg gctctcaggc gcatttctcc     300
gagcatccgt ctatgggcag tttgtggctg gtgagacagc agaggaggtg aagggctgcg     360
tgcagcagct gcggaccctc agcctccgac cactgctggc agtgcccact gaggaggagc     420
cggactctgc tgccaagagt ggtgaggcgt ggtatgaggg gaacctcggt gctatgctgc     480
ggtgtgtgga cctgtcacgg ggcctcctgg agccccccag cctggctgag gccagcctca     540
tgcagctgaa ggtgacggcg ctgaccagta tcggctctg taaggagcta gcctcgtggg     600
tcagaaggcc aggagcctcc ttggagctga gccccgagag gctggctgaa gctatggact     660
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ccctcagccg cctgcatcgg gtggcacagt atgcccgggc ccagcacgtg cggctcctgg     780
tggatgcgga gtacacctca ctgaaccctg cgctctcgct gctggtggct gccctggctg     840
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taaaggacac attcgagcgg ctggggaggg atgcagaggc tgcgcacagg ccggcctgg     960
ccttcggagt gaagctggta cgaggtgcat atctggacaa ggagagagcg gtggcccagc    1020
tcccatggaa atggaagacc cccccactca ggctgactat gaggccacca gttcagagtt    1080
acagcccgct gcctggaact gatgctgacg cacgtggccc gccatggccc catgtgccac    1140
ctcatggtgg cttcccacaa tgaggaatct gttcgccagg caaccaagcg ggcaggccgg    1200
ctatgtagtg tataagtcca ttccctatgg ctccttggag gaggtaatcc cctacctgat    1260
ccggagggcc caggagaacc ggagcgtgct tcagggtgcc cgcagggaac aggagctgct    1320
cagccaaaaa ctgtggcggc ggctgctgcc aggatgccga aggataccc actagcaccc    1380
ctgaggggt catgtggtca ataaaagtcc ttaggtgctg cctaaaaaaa aaa             1433
```

<210> 350
<211> 1062
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1062)
<223> n = a,t,c or g

<400> 350
```
tttttttttt ttccagtcat taatgatctg tcctttgag atcttttact tcagaggaag      60
atttaggcaa gagagcaaca tataatagtc agtgatacaa agaagggcat ggaacatttg     120
```

```
gggaacacag gggtttggag ggcctgaagc acaggggtgg tggtattaga aatgtgggaa    180
atatgggcca tgagcctccg gacagaatgg ggtccaggaa ggacagcatc acacactggt    240
gctggaattt ggggatcctt ctgtgggcaa cctcagcagt ctggttattg gccctttttt    300
cttacagcct ggaaaactgg accaagtttc tattgatctc agcgaccgac cggcagcctg    360
taaggggcca tggaagtgtg gaactcattt gttaaaatgt tcaaaacttc cttaacacca    420
tgttcaccct tgcaggcaag gccccatagg attggtctcc caagaaaaat gcacttagct    480
ccaagggcca gagccttctg cacatcattg ccagttctga ccccggcatc caggtagtac    540
ttcatgttcc cctattcagc agctcctact tctgtcaaag catcaattga agcaagaacc    600
tcatcaagct gcctcccacc atggttggaa acaatgatac cctggacatt gtgcttcaca    660
gctaactctg catcctcttt tgtcaaaatc cctttcagga tgatgggcaa tcgagttatg    720
ctctgaaacc aggagagatc attccagcag agagaagtgc tgataggagt catctggaaa    780
taaggtattg catttccctt tttaggtgat tgaagatctg ttagtgttaa gttcctcctc    840
aactggtttc gaatgtcatg tcgcctgttg ccacatacag gtgtatccaa agttattacc    900
aaagctttga aacctaggga ttctaccctc tggatcaact gtttgttcag ctgcaggtct    960
ggatgcacat agagttggaa ccatcggagg ccttcgggag ctcttgctgt gctcatttcc   1020
ccgaattcca ccacnctgga ctagtgttct caaaannntc ga                      1062
```

```
<210> 351
<211> 1227
<212> DNA
<213> Homo sapiens
```

```
<400> 351
cagtttttttt tttttttttt tgctgcatga ttttattact ataaatatac agtaaaaacg    60
aaccaacgat gagcccatct gagcacatca gacggcagca catgggagtc ccagcgggcc   120
actctgcggc ccgaacttca cgcaaagctc tggcaccagg actgatggcc agaggctggg   180
gccttggtgg gggcgggggg cgggcggtgc aggggggctgt gtgtgttgtt ggggagaggt   240
gcatggggggg agagaggtgc ttggggtggg gtagaggtgc gtgggagatg ctcggtccga   300
gtgcacacac atgcatggga acatgtgcag gagtatgtgc gtgtgtgtat gcgtgacagc   360
atgtgtgagc gtgagtgtgc atgtgtgaac gtgtgcgtga gcatgtgcaa gtgggcgtgc   420
atttgtgtgt gtgtacgtgt gagcgcatct gcgtgcctgt gcacgagcgg gaggggtggc   480
tggcctgggt gtgcagggag ctgggtgtga ggaccgtgct gtccactgct gggtctcgcc   540
caggaggcag agctcatgct cggagccacc gtgagcctca gggagggtac tgagctgccc   600
cacagccgac ctgtccccag gcccccactg cagggcagcc ctccagagcc aggtgagcag   660
cagacacctt gcctggccca aggctccgca ggggtggatc catgccctgg gtcaccacgg   720
cccaggcact ccctttgcca tctgcggccc caggaggttt acctataaaa aaaacaaaca   780
aacaaacaaa caaaacagga cgaggtcgcc cagaggccaa gcctccccgg ccgggacccc   840
attccccagg tgtgctgctg gcttcctcct ccctgggccc agcctgccac agaaagcctg   900
agacagaaca aaccaaatca gagagaactg caaggggggcc gggcgcggag gctcacgcct   960
gtaatctcag cactctggga ggccgaggca ggtggatgac cttaggagtt tgagaccagc   1020
ccggccaaca tggtgaaatc ccttctctac taaaaataca aaaaattag ccgagcatgc   1080
tggtaggcac ctgtaatccc cagctactca ggagcctaag gcaggacgat cacttgaacc   1140
cgggaggcgg aggttgcagt gacccgagat tgagccactg cactccagcc tgggcagcaa   1200
gagtgaaact ccatctcaaa aaaaaaa                                       1227
```

```
<210> 352
<211> 1194
<212> DNA
<213> Homo sapiens
```

<400> 352

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tttttttttt ttatgatttt aatatacttt atttatttaa aaagtacaca gttttaaatt    60
ggtttcaata ggtttcaagc agaagggaca ctgcctacca cttgcggtcc catttctgat   120
gaagggtgat tatcatgtgg caaactcaca tttgcatgac tggcaaagta aaaagataga   180
taactttttg tcaacatatc tttaagagtt tatatcacgc acagtttaaa atcatgacga   240
gatgctgatg gttggactat attcatgtct cgtatgttgc accatatttt ggttcacagt   300
ttatccatga tttagcatgc caagagaaca tctcagtcag taagagaaca tctcagtcag   360
tgtcaccttg agaagagcat caaaagcaga·gggagcagaa ggaggaccgt ctgggcttgg   420
agactcggcg caccccaca ctccctcgca ttctcctcag gatggaagcc atgacaagat   480
tctgggcgcc ttctgatctt ctgggccttt agacgttcac acttaaggga ttcattatgt   540
tgactgtagt taaggcatgt ttccaggat tgcttttttc tactctgcat ttcagaggtc   600
aaaatttggc aatgacaact ctcttaacta ctctctctct ccaacagtgg aaaggatgta   660
attttccttc tctaatattt ctcccccagg tttccttacc actgataccc cttactggtt   720
tccgtggtag tgagtggacc tgcacacaaa aggatatacc tgatttcaat gggtgccatg   780
gtgatggggg ccacagattc acagaggcag ·ctgctgtcca ccaccaccat gaacaggttg   840
ctgcttggga tttgctggat gacaaaggac ctgttggaac aagaggtagc gaggcagtca   900
tttaccatcc gtcaattaaa gagccatgag gaagacttct ctcctgggtg gtagcaacta   960
ccatattttg taaagcaaat tttggagact attttactac taatgttacc ttctttctcc  1020
atgaggctct tcacttacaa ataacctagct tcactaggaa aacaacaata gctatgacga  1080
catgcggctc·atacaactca ccttggaaag actgaagtgc tgtatgtaca aaacacaaga  1140
gtcagagttg gctgaatcac ctgttcccaa ggtttaagag gtcagacttt caaa         1194
```


<210> 353
<211> 1140
<212> DNA
<213> Homo sapiens

<400> 353

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actctcacaa ttaaaacatt tggaaaggaa ttaatggtgt atttccatta gggaaagtgc    60
tgacaagccg caagggatcc cttgatggtt ctgggcatgg gcgcccagcc tgggctctgg   120
ctttgggagc agcgagggga atgtgtctct caccctagg cctcctggtc tggctcctgc   180
tcaggccaca cggcgcaccc accccagcg cgcctcagtc caggtcactg gcaggtgt     240
ttactgctgc gctccaccc aagcatgtag atttcagaag gggactagga cccccggcag   300
gtgtttgaga ccaccggctc ccaagtgcgt cgccttgggg gtttgcatcg gctcctcagc   360
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<211> 2401
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<212> DNA
<213> Homo sapiens

<400> 354

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<210> 355
<211> 2186
<212> DNA
<213> Homo sapiens

<400> 355

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<210> 356
<211> 1142
<212> DNA
<213> Homo sapiens
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<400> 356
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tcctgcaaca agaagtcctc accagacaga aagcctttga ttgtgatgta tgggaaaaga   240
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gaatgtaatg aagatgggaa gatatttatc aaattcaggc ttcattcagc atctgagagt   360
tcacaccagg gagaaatcat gtatgtactg catgtggtaa agccttcagt catagctcag   420
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cagtcaaaga aactaccttg tttagtatca aattcacgcc atgcaaaaag attataaatg   720
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        <210> 357
        <211> 3167
        <212> DNA
        <213> Homo sapiens

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        <223> n = a,t,c or g

        <400> 357
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<210> 358
<211> 4747
<212> DNA
<213> Homo sapiens

<400> 358
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caatcagtac tccactgaag gagaaaagga ttatgaaaaa acaatgaaag cacagggtag  240
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      <213> Homo sapiens



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<212> DNA
<213> Homo sapiens


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<210> 364
<211> 832
<212> DNA
<213> Homo sapiens
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<400> 364
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<210> 365
<211> 1321
<212> DNA
<213> Homo sapiens

<400> 365
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aacttcctcg ggggccggct gatgatccct aatacaggaa tcagcctcct catcccccca    180
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cctgggcgtc ctgcttaccc ggccagtcat cctggggtat ggaccactgt gggggagccc    360
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<210> 366
<211> 777
<212> DNA
<213> Homo sapiens

<400> 366

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gagcagctgg gtcagctcta cggctgcgag gaagaagaaa tgccagaggt agaaattgac   180
attgatgatc tttttgatgc atacagtgat gaacagagag cttcaaaatt acaggaagct   240
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atcaagggag ggggaccctc agggaagggc ccccccaggt tgcgtttcct gcagggactc   660
aaatgttaat tcccttatga tcccggaaaa atagttttt tacaagaagt tgggcaaaat   720
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<210> 367
<211> 2056
<212> DNA
<213> Homo sapiens

<400> 367

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aacacggaag tctgtctatg gtttacaaaa tgatattaga agtcacagtc ctacccacac   720
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gaaacaaact catgtcttcg gtctgttgtc tgtacattct ccgttaatgt ttctcgcatt  1920
tattttttata ccatatttaa agaagaaaca ccttttactc caaatgtatt aaagttgatc  1980
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gaatctcaaa aaaaaa                                                     2056
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<210> 368
<211> 460
<212> DNA
<213> Homo sapiens

<400> 368

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gacggagagg tactgacgac aaatcagatc tatgtgacca gacatgagaa ggctgcctat    180
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atggtgaacc tgacggagat acacacgttc ttctctctct tcctgacaat tgtgggcgct    300
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gcttgggttc tatttcaaaa atgaaaactc tttacagggt ggccatagga ctttatatgg    420
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<210> 369
<211> 2355
<212> DNA
<213> Homo sapiens

<400> 369

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<210> 370
<211> 1333
<212> DNA
<213> Homo sapiens

<400> 370
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<210> 371
<211> 2457
<212> DNA
<213> Homo sapiens

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ctgcgcggcc acctggtccc taaggagatg tcgctgtggg agtcactggg agagagctgg     660
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cacagcggct gggagcctcc tgtggatgtg ctgcaggagg ccccctggga ggtggagggg     780
ctggcgtctg cccccatcga ggaggtgagt ccagtgagcc gacagtccat aagaaactcc     840
cagaagcaca gccccacttc agagcccacc cccccggggg atgccctacc accagtcagc     900
tccccacata ctcacagggg ctaccagcca acaccagcca tggccaagta cgtcaagatc     960
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tacgtgccct gcaacatcct aggcgaggcg cgaccggagg acgccggcgc cccgttcgag    1140
caggccggtc agaagtactg gggccccgcc agcccgaccc acaagctacc cccaagcttc    1200
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aaagtggggg aacgacacac acttcacctg caagggccga caacgcaggg gacaccgtgc    2160
cggcttcaga cactcccagc gcccactctt acaggcccag gactggagct ttctctggcc    2220
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agttaagtct caaaaaaaaa aaaaggggg ggccgtttta aagaacccctt gggggggcccc    2400
aagttaacgc gggctggcaa ggtaaaagtt ttttccttat agggagccgt ataaaac       2457
```

```
        <210> 372
        <211> 1333
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 372
aagcttggca cgagggtctt gtcagcagcc cggccattgg agcatatctt tctgccagtt      60
acggagacag cctcgttgtg ctggtggcca cagtggtggc tcttctggac atctgcttca     120
tcttagtggc tgttccagaa tctctgcctg agaaaatgag accggtttcc tggggagctc     180
```

```
agatttcttg gaaacaagca gacccttttg cgtcgttgaa gaaagttgga aaagattcta    240
ctgtcttact aaatctgcat caccgtgtgt cttcatacc ttcctgaagc tgggacagta    300
ttcaagtttt ttttctctat ctcagggcag gtcataggt ttgggatctg ttaaaattgc    360
agcattcata gctatggtag gaattctgtc tattgtggct cagacggcct ttcttagcat    420
cttgatgaga tcattaggaa ataagaatac tgtcctcctt ggcttgggct tccagatgct    480
ccagttagcc tggtacggtt ttggatcaca ggcctggatg atgtgggcag cagggaccgt    540
ggctgccatg tccagcatca cgtttccggc aatcagtgcc ctcgtctctc ggaatgcaga    600
gtcagatcag caaggagttg cccaggggat cataactgga ataagaggac tatgcaatgg    660
cctgggcca gcactgtatg gcttcatatt ctacatgttc catgtggaac tgactgagtt    720
gggccccgaaa ttgaattcta caacgttcc cctgcaggga gctgtcatcc caggcccgcc    780
gttttattt ggggcatgta tagtccttat gtctttctg gctgccttat tcattcctga    840
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cacccagaa cggggcagtg atgaggacat tgagccacta ctgcaagaca gcagcatctg    960
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tcatggtgct ggatgggaga cgctagcggc atccttcagg gccaagtttg ataaatacca   1140
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tcccggttaa tccttaaaac cagaaaaaaa ttggaaaaac ttctttgcaa aaagggggca   1260
actcccaggg ggaacctcaa ataaaaaaag cattctttg tgaaaaaagg agggcttcct   1320
tgaaaggaca aaa                                                       1333
```

```
<210> 373
<211> 2578
<212> DNA
<213> Homo sapiens
```

```
<400> 373
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cccctggccc agcaacccct gcccccggca ccggggggtga aggcatctcg aggagatgag    120
gttctggtgg tgaacgtgag cggacggcgc tttgagactt ggaagaatac gctggaccgc    180
tacccagaca ccttgctggg cagctcggag aaggaattct ctacgatgc tgactcaggc    240
gagtacttct tcgatcgcga ccctgacatg ttccgccatg tgctgaactt ctaccgaacg    300
gggcggctgc attgcccacg gcaggagtgc atccaggcct tcgacgaaga gctggctttc    360
tacggcctgg ttcccgagct agtcggtgac tgctgccttg aagagtatcg ggaccgaaag    420
aaggagaatg ccgagcgcct ggcagaggat gaggaggcag agcaggccgg ggacggccca    480
gccctgccag caggcagctc cctgcggcag cggctctggc gggccttcga gaatccacac    540
acgagcaccg cagccctcgt tttctactat gtgaccggct cttcatcgc cgtgtcggtc    600
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cagccctgtg gcgaacgctt cccacaggcc ttttctgca tggacacagc ctgtgtactc    720
atattcacag gtgaatacct cctgcggctg tttgccgccc ccagccgttg ccgcttcctg    780
cggagtgtca tgagcctcat cgacgtggtg gccatcctgc cctactacat tgggcttttg    840
gtgcccaaga cgacgatgt ctctggcgcc tttgtcaccc tgcgtgtgtt ccgggtgttt    900
cgcatcttca gttctccag gcactcacag ggcttgagga ttctgggcta cacactcaag    960
agctgtgcct ctgagctggg cttcctcctc ttttccctaa ccatggccat catcatcttt   1020
gccactgtca tgttttatgc tgagaagggc acaaacaaga ccaactttac aagcatccct   1080
gcggccttct ggtataccat tgtcaccatg accacgcttg ctacggaga catggtgccc   1140
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gccctgcctg tgccagtcat tgtgtccaac tttagccgca tctaccacca gaaccagcgg   1260
gctgacaagc gccgagcaca gcagaaggtg cgcttggcaa ggatccgatt ggcaaagagt   1320
ggtaccacca atgccttcct gcagtacaag cagaatgggg ccttgagga cagcggcagt   1380
ggcgaggaac aggctgtttg tgtcaggaac cgttctgcct ttgaacagca acatcaccac   1440
ttgctgcact gtctagagaa gacaacgtgc catgagttca cagatgagct caccttcagt   1500
gaagccctgg agccgtctc gccgggtggc cgcaccagcc gtagcacctc tgtgtcttcc   1560
cagccagtgg gacccggaag cctgctgtct tcttgctgcc ctcgcagggc caagcgccgc   1620
gccatccgcc ttgccaactc cactgcctca gtcagccgtg caggcatgc aggagctgga   1680
catgctggca gggcttgcgc aggagccatg ccccttcaga gccgctccag ccttcaatgc   1740
```

```
caagccccat gacagccttg acctgaactg cgacagcggg ggacttcgtg gctgccatta   1800
tcagcatccc tacccctcct gccaacaccc cagatgagag ccaaccttcc tcccctggcg   1860
gcggtggcag ggccggcagc accctcagga actccagcct gggtacccct tgcctcttcc   1920
ccgagactgt caagatctca tccctgtgag gggtaggcct gctgattcag agggtcctct   1980
tcattttttgg gaactccttt ccaaagccat atttttggga ggcagagagg ggcaggcttg   2040
ggcacccctt ctgcccccc cactgagaac tatgcaatgg agtttcatga aatggtccac   2100
atagtgggga agtagccagg aaatgagaaa cttcctccca ccccagacat ttttcctggt   2160
gggagctgaa gcactgggct tccacaggcc cctggcctcc ttgccctagc acactgggac   2220
tggccccact ctcccagctg gactcctgca tgctcctccc cttgggctct cagatgaagg   2280
caaagctttg atccgacatc tgagctctag cctaagaagg agagttgaga tttcctcctc   2340
cctctggctg ggatatggag ctttggaggt tcagagaaga gaaccctcac ctctgatctg   2400
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gaatgcaaac acaggcttca tggggctgtg gccttctggc aggcgacctg ccatccccag   2520
ggccttgcct gagggggttc aggcttgcct tttcccaaca cacactcaga taggcaca    2578
```


```
          <210> 374
          <211> 664
          <212> DNA
          <213> Homo sapiens
```


```
          <400> 374
tgaggctggg gcaagccttt taaggactgg accacgggtg ggcaggatac cggggggagaa    60
cccgccctgt tagttggggc tggggagggc cgcgcaccga gactaaattg tccttccggg   120
cagatccgct caccaggccc tggcgacctg agcatctacg acaactggat ccggtacttc   180
aaccgcagca gcccggtgta cggcctggtc cccagagcaa gacttcagcc aggatctacc   240
ccacctacca cacagccttt gacacctttg actatgtgga caagtttttg gacccgggtg   300
aggagggaga caaggggcat cctgagacca ggacaggaga ggctgaagac tgagccctgg   360
ccttgtcacc ttgccgcagg cttcagcagc catcaggctg tggcccggac agcggggagt   420
gtgattctcc ggctcagtga cagcttcttc ctgcccctca aagtcagtga ctacagtgag   480
acactccgca gcttcctgca ggcagcccag caagatcttg gggccctgct ggagcagcac   540
agcatcagcc tggggcctct ggtgactgca gtggagaagt ttgaggcaga agctgcagcc   600
ttgggccaac gcatatcaac actgcagaag ggcagccctg accccctgca ggtccggatg   660
ctca                                                                664
```


```
          <210> 375
          <211> 1495
          <212> DNA
          <213> Homo sapiens
```


```
          <400> 375
ggaattcgag gcggggcag cctcgccagc gggggccccg ggcctggcca tgcctcactg    60
agccagcgcc tgcgcctcta cctcgccgac agctggaacc agtgcgacct agtggctctc   120
acctgcttcc tcctgggcgt gggctgccgg ctgacccccgg gtttgtacca cctgggccgc   180
actgtcctct gcatcgactt catggttttc acggtgcggc tgcttcacat cttcacggtc   240
aacaaacagc tggggcccaa gatcgtcatc gtgagcaaga tgatgaagga cgtgttcttc   300
ttcctcttct tcctcggcgt gtggctggta gcctatggcg tggccacgga ggggctcctg   360
aggccacggg acagtgactt cccaagtatc ctgcgccgcg tcttctaccg tccctacctg   420
cagatcttcg ggcagattcc ccaggaggac atggacgtgg ccctcatgga gcacagcaac   480
```

```
tgctcgtcgg agcccggctt ctgggcacac cctcctgggg cccaggcggg cacctgcgtc    540
tcccagtatg ccaactggct ggtggtgctg ctcctcgtca tcttcctgct cgtggccaac    600
atcctgctgg tcaacttgct cattgccatg ttcagttaca cattcggcaa agtacagggc    660
aacagcgatc tctactggaa ggcgcagcgt taccgcctca tccgggaatt ccactctcgg    720
cccgcgctgg ccccgccctt tatcgtcatc tcccacttgc gcctcctgct caggcaattg    780
tgcaggcgac cccggagccc ccagccgtcc tccccggccc tcgagcattt ccgggtttac    840
ctttctaagg aagccgagcg gaagctgcta cgtgggaat cggtgcataa ggagaacttt     900
ctgctggcac gcgctaggga caagcgggag agcgactccg agcgtctgaa gcgcacgtcc    960
cagaaggtgg acttggcact gaaacagctg ggacacatcc gcgagtacga acagcgcctg   1020
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ccatgtccat ctgggccact gtcaggacca cctttgggag tgtcatcctt acaaaccaca   1320
gcatgcccgg ctcctcccag aaccagtccc agcctgggag gatcaaggcc tggatcccgg   1380
gccgttatcc atctggaggc tgcagggtcc ttggggtaac agggaccaca gacccctcac   1440
cactcacaga ttcctcacac tggggaaata aagccatttc agaggaaaaa aaaaa         1495
```

```
<210> 376
<211> 373
<212> DNA
<213> Homo sapiens
```

```
<400> 376
gcctcataaa actctgcaaa tctaaggcca aaagctgtga aaatgacctt gaaatgggca     60
tgctgaattc caaattcaag aagactcgct accaggctgg catgaggaat tctgaaaatc    120
tgacagcaaa taacactttg agcaagccca ccagatacca ggcgagctga aggaaatcaa    180
gcaagatatc tccagcctgc gctatgagct tcttgaggaa aaatctcaag ctactggtga    240
gctggcagac ctgattcaac aactcagcga gaagtttgga aagaacttaa acaaagacca    300
cctgagggtg aacaagggca agacatttta gcagcccaca tcggcgtctg tgacttctac    360
cagcattcca agg                                                      373
```

```
<210> 377
<211> 2867
<212> DNA
<213> Homo sapiens
```

```
<400> 377
cttcctcttc tccacgcagg cttcaacagg agatttatgg agaatagcag cataattgct     60
tgctataatg aactgattca aatagaacat ggggaagttc gctcccagtt caaattacgg    120
gcctgtaatt cagtgtttac agcattagat cactgtcatg aagccataga aataacaagc    180
gatgaccacg tgattcagta tgtcaaccca gccttcgaaa ggatgatggg ctaccacaaa    240
ggtgagctcc tgggaaaaga actcgctgat ctgcccaaaa gcgataagaa ccgggcagac    300
cttctcgaca ccatcaatac atgcatcaag aagggaaagg agtggcaggg ggtttactat    360
gccagacgga atccgggga cagcatccaa cagcacgtga agatcacccc agtgattggc    420
caaggaggga aaattaggca ttttgtctcg ctcaagaaac tgtgttgtac cactgacaat    480
aataagcaga ttcacaagat tcatcgtgat tcaggagata attctcagac agagcctcat    540
tcattcagat ataagaacag gaggaaagag tccattgacg tgaaatcgat atcatctcga    600
```

```
ggcagtgatg caccaagcct gcagaatcgt cgctatccgt ccatggcgag gatccactcc      660
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accgctttct ttcttggaaa ggaaagagta aagggaagcc tcgatcagtt ggatgaggtg     1260
gcagccctca ttgctgccac agtccatgac gtggatcacc cgggaaggac caactctttc     1320
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ttccttatt tctggctcac agaggcagcc acgaggcact acaccaagta ttatataaaa     2820
gccattaaat ttgaatgccc ttggacaagc ttttcttaaa aaaaaaa               2867
```

```
        <210> 378
        <211> 8053
        <212> DNA
        <213> Homo sapiens




        <400> 378
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        aacgctataa atgcaaaacg gtctaaagaa aaaaaccctg ggaatcaggg caggcagttt      120
        gatgttaatc tgcaagtccc tgacagagca gttttaggga ccattcatcc agatccagaa      180
        attgaagaaa gcaagcaaga aactagtatg attttggata gtgaaaaaac aagtgagact      240
        gctgccaaag gggtcaacac aggaggcagg gaaccaaata caatggtgga aaaagaacgc      300
        cctctggcag ataagaaagc acagagacca tttgaacgaa gtgactttc tgacagcata      360
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        aacgacaacc ctgaggaaca tctgaagacc tcagggcttg caggggagcc tgagggagaa      480
        ctctcaaaag aggaccatga gaacacagag aagtacatgg gcacagaaag ccagggtct      540
        gctgctgcag aacctgaaga tgactcgttc cactggactc cacatacaag tgtagagcca      600
        gggcatagtg acaagaggga ggacttactt atcataagca gcttctttaa agaacaacag      660
```

```
tctttgcagc ggttccagaa gtactttaat gtccatgagc tggaagcctt gctacaagaa   720
atgtcatcaa aactgaagtc agcgcagcag gagagcctgc cctataatat ggaaaaagtc   780
ctagataagg tcttccgtgc ttctgagtca caaattctga gcatagcaga aaaaatgctt   840
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gctgcagtgc ttgatgacat tcaagacctc atctattttg tcaggtacaa gcactccaca   960
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aatgtgcagg ttcctgaaga acccacccac ttggaccaac gtgtgattgg ggacactcat  1140
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        <212> DNA
        <213> Homo sapiens


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184

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        <213> Homo sapiens




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        <211> 1459
        <212> DNA
        <213> Homo sapiens




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<211> 2408
<212> DNA
<213> Homo sapiens

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<211> 2204
<212> DNA
<213> Homo sapiens
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gcctccatct cccccagcag agtctcaggg ttggcactgg tcttctcttc ctccacacag   1920
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aaacgatctc taaaaagaag gatgtcatca ggattcctaa aattaatgta tgctcttgag   2040
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```

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```

<210> 387
<211> 798
<212> DNA
<213> Homo sapiens

<400> 387
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tctgcggacc cagggtttgg gaagtgctga tgtggagcca caggacttgt tttagggcgt   180
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gggtctcttc ttcgatgatt cctatggctt ctacccaggc caggtgctca ttggccctgc   360
caagatcttc tccagcgtcc agtggctgtc aggtgtcaag cccgtgctca gcaccaagag   420
caagttccga gtggtggtgg aagaggtgca ggttgtagag ttgaaagtta catggattac   480
caagagtttc tgtccagggg gcacggacag cgtcagcccc ccacgtctgt catcacccag   540
gaaaacctag gcagggtgaa gcgtctcgga tgctttgacc atgctcagcg gcagcttggg   600
gagcgctgtc tgtatgtctt cccagccaag gtagagccag ccaagattgc ctgggaatgt   660
ccagaaaaaa actgcgccca gggggagggc tctatggcca agaaggtgaa gcgcctgttg   720
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```

<210> 388
<211> 4530
<212> DNA
<213> Homo sapiens

<400> 388
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gttaatgtga cactctgcga gggacccaac aagttcaagt gtcacagcgg cgaatgcatc   300
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ctggagggtg gctacaagtg ccagtgtgag gaaggcttcc agctggaccc ccacacgaag   600
gcctgcaagg ctgtgggctc catcgcctac ctcttcttca ccaaccggca cgaggtcagg   660
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```

189

```
gacatctact cgctggtgac tgaaaacatt cagtggccca atggcatcac cctagatctc   1140
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aatgggggca accggaagac catcttggag gatgaaaaga ggctggccca ccccttctcc   1260
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```

<210> 389

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<211> 2343
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2343)
<223> n = a,t,c or g
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    <400> 389
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tctgaaaaca tccacggtga agggcagggc caggcctggc tgtggagtgg gccagctgag       180
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acattcctga gcgctgacaa cgtggagccc tcaccgcccc cacctacccc aacctcaatg       300
gggaaggaaa ggggcctgag ctgggcaggg ctgcccgggc tcactatgtg cctgctccag       360
gagtccctgg cccctgtgct ggcaggagca tccctgagct ggaccgggag gcctctctgg       420
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tggtgctgcc agggcgtgtt ggccaggaat gagctcccag ggcagccctg aggaaagggt       540
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cccagcccgg gaattcggtn ncggtcgtcg tgcgtacggc ttcaatnatc aaanngnggc      2340
acg                                                                     2343
```

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<210> 390
<211> 1325
<212> DNA
<213> Homo sapiens
```

<400> 390

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agattcagcc aggaacccac aggcaactcg gcctacccc agctgaggcc ctttttggac      120
ccgcagggga gagatcttaa acccagcgct ttggtcccac ccacccgctc ccacactggg      180
aggagaccat ggctccacac acagcccctg ccaggcccac aggggcgggc atgggggccc      240
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gcccggtgct tgggggagga gggcagggac agggagggag ccacagtcag tgcccgggaa      660
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ccagctcagg cacaacagag tctggcaggc tctggcaccc tgggcctcct ccgggagcct      1320
cccat                                                                   1325
```

<210> 391
<211> 1458
<212> DNA
<213> Homo sapiens

<400> 391

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cctgcggagt ttgtcctcac gcacaccaca cacgatcggg tataaaacac attctataaa      180
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agtttccagg ccatctgaag actccgacag gggcttgtat aagaagcagg ctatggcaaa      540
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```

```
tgcagtgaga agacgaggat gcccagcagg ctgacaacgg tgcagaacag gcagaacttg   1320
atgaccgcgg agccccggag cctgagcttg ttcacaaaga agccgcccag gaaggtgccg   1380
ccaccacccg ctggcaccac caggtaccca aacaaggtgg cagcttctga ggcactcagg   1440
cgaattccac cacacgga                                                 1458
```

```
<210> 392
<211> 1667
<212> DNA
<213> Homo sapiens
```

```
<400> 392
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cattcacaca aacacaggta ctgaataaat taaacgctca ggctctggcc ccaccccagc   180
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ggatgacgcc gcgcgcgccg cccggcgcgc ccaccttgcg cagcagc               1667
```

```
<210> 393
<211> 1938
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(1938)
<223> n = a,t,c or g
```

```
      <400> 393
      gtggaaagaa cagtcagaaa gcctctcctg tggatgatga acagctgtca gtctgtcttt      60
      ctggattcct agatgaggtt atgaagaagt atggcagttt ggttccactc agtgaaaaag     120
      aagtccttgg aagattaaaa gatgtcttta atgaagactt ttctaataga aaaccattta     180
      tcaataggga aataacaaac tatcgggcca gacatcaaaa atgtaacttc cgtatcttct     240
      ataataaaca catgctggat atggacgacc tggcgactct ggatggtcag aactggctga     300
      atgaccaggt cattaatatg tatggtgagc tgataatgga tgcagtccca gacaaagttc     360
      acttcttcaa cagctttttt catagacagc tggtaaccaa aggatataat ggagtaaaaa     420
      gatggactaa aaaggtggat ttgtttaaaa agagtcttct gttgattcct attcacctgg     480
      aagtccactg gtctctcatt actgtgacac tctctaatcg aattatttca ttttatgatt     540
      cccaaggcat tcatttttaag ttttgtgtag agaatataag aaagtatttg ctgactgaag     600
      ccagagaaaa aaatagacct gaatcttcag ggttggcaga ctgctgttac gaagtgtatt     660
      ccacaacaga aaaacgacag tgactgtgga gtctttgtgc tccagtactg caagtgcctc     720
      gcccttagag cagcctttcc agttttcaca agaagacatg ccccgagtgc ggaagaggat     780
      ttacaaggag ctatgtgagt gccggctcat ggactgaaac tcagcaggga ctctgggaag     840
      tctgaccaag ttggagcaga tggtttgtta cttgaatctc caaacactta gttgaatttt     900
      tacagatatt tcagatcagt gggtgttggg gccactattg ttacctccaa attttatttt     960
      ttgcccttaa ttccatttct cccagctacc atgtactatt gtttaatgtt cagtttggtt    1020
      tcatttttaa ttttatggtt ctgtgcgtcc cccatattta atatttatta ttcaaacgca    1080
      tgcatataga cagagcatgc agtgaagagt attaaaaaaa aaagcttagt agatttggtg    1140
      cagcttttga aacttaggtt agacgtgaaa ctgaaataca ggtttcaaat ttacttcccc    1200
      agaacctaaa aatgcaagat gtttttgata ccaaccataa cctcctgaga atagtaagtg    1260
      ttcccccggg gcattaaggg taagcctggg ggtggttttt gaccaaatcc cagtccctgt    1320
      tttacctttta cccagcggca actttcaccc aacttcccct ctcccaagtg agtcttagag    1380
      agtgcagtcc cattcctttt tgaagggtga gatggaagtg gtcgtaaact gactggtgtc    1440
      ttctgtttct gggaggcaca cttgtaaggc acagtggctg ctttgggagg agtaaggtgt    1500
      gagaaaaagc aaccttggag gccagtaaca atgacagatt tcaatcgtgg ttttaggaat    1560
      tataatacgt ggcatacatc tcataaaggc ttttgctggg atattgaatt ccctgaattt    1620
      ttctgttttc gacctgttaa aaaaatctta acatccatca aactagtggt caaacaaatg    1680
      agaatgcagc tgttctcaga gtaattttta agttgtcatt tccctgtgtt gcctcccaat    1740
      tggaagaagt taaggtttac caaatgcatt tctatttcaa gggtatctga aacgtaaaca    1800
      ttcaaaactg aaggctgact gacttnagat gttttgcagg tggctggaga gaacagggaa    1860
      ggtaatagag acacacttag tcccatggga agcgcagcac cgttgtaggt tctttctcct    1920
      gtcccattag cgacctca                                                  1938
```

```
      <210> 394
      <211> 1283
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(1283)
      <223> n = a,t,c or g
```

```
      <400> 394
      gatttcagtt gcctgaaagc tgtaagtctg cttttttaaa agagaaattg gagttaagca      60
      gacttttcat tttttgatca tgaccctgga aagagaaata tatttgacat caaaactcag     120
      cacatatcct tggtctatat atacacatga aagtttcata aaacaataca ctgatatttt     180
      ccatgctgta ttctatttca ttttttaaaa tgctggttgt atcccattaa actggtttca     240
      aaataaatat aacatgtaca caacaacaac aaaaaaaaac actgggttag agggccagta     300
      agctcagcga gtatcagcaa ctgagacttc atccttgtct cacaggact aaaaagagaa     360
      taatgttctc attatgtggt tcaatgccac acccatgtat ctgagatata catgtcacaa     420
      tctgggagaa gcctgtcctc aatttacttt aaatacccaa ttctgcctag aacatgaatt     480
```

```
agacacatag taagctcttg agtgaagtgc agatgataat gacacgatca cataccactt   540
aaaaatatct taacacctt acttagatct catctcatac ttgtagcatt tcttcaaatt   600
tactttgaaa aaagagcttc actgtgtgtg gttgtcatac acattcttct acccaaccat   660
ggacctcttt tttcctctca ggcgcacttc atctaatttt tttagcactg gcctggcctt   720
tttggaggag gtggagtagc tcttcagaaa ggcttcaaac acagtttcag tgttgggatg   780
ggtactgagg aaggccttct ccaggacata gaggtctact cccttatcct ctggaagtgc   840
tgaaatgaaa ctcagcccaa agtctatgag cacaatgttc agctgttcca gggggggttt   900
caggagcatg ttggaggtgg tgagatcacc atgaatgagg tcttcatcgt gcattcgagc   960
caaaacctgc ccaattgtct tggctaagtt ggagagaccc tggggagttt ttttcagtct   1020
ccatagtgga ctgaatataa tctcgaacag tcactgagcc ttcaattct tccatatata   1080
agcagttgga agcatagtcc acaaaaaaga caactggggc agatattcca gcgcggcgac   1140
agcggaggag cgcccgggcc tcctgcaccg tccgccgtct gccaagccgc gcctccagcg   1200
ccgggtgccg gtagccttgg gaagcggtgc ttnnttncnn ggccttgcta gcccctggc   1260
tcattnnccc cggcccggtc tcc                                          1283
```

```
        <210> 395
        <211> 2149
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 395
acgagcctgc gttttccggc cagaggacat gatgcagggg gaggcacacc ctagtgcttc   60
ccttattgac agaaccatca agatgagaaa agaaacagag gctaggaaag tggtcttagc   120
ctggggactc ctaaatgtat ctatggctgg aatgatatat actgaaatga ctggaaaatt   180
gattagttca tactacaatg tgacatactg gcccctctgg tatattgagc ttgcccttgc   240
atctctcttc agccttaatg ccttatttga tttttggaga tatttcaaat atactgtggc   300
accaacaagt ctggttgtta gtcctggaca gcaaacactt ttagggttga aaacagctgt   360
tgtacagact acgcctccac atgatctggc agcaacccaa atccctcccg ctccaccttc   420
cccttcaatt cagggtcaga gtgtgttgag ttatagccct tctcgttcgc ccagtaccag   480
tcccaagttc accaccagct gtatgactgg ttacagccct cagctgcaag gtctgtcctc   540
aggtggcagt ggttcttata gccctggagt gacctactcg cccgtcagtg gttataataa   600
gttggcgagc tttagcccct ctcctccttc tccgtaccct accactgttg gaccagtgga   660
gagcagtgga ttgagatctc gctaccgttc ttcacctacc gtctacaact cacctactga   720
caaagaagac tacatgaccg acctacgaac tttggatact tttctcagaa gtgaagagga   780
gaaacagcat agggttaagc tggggagccc agattctacc tctccttcca gcagtcctac   840
tttctggaac tatagtcgtt ctatggggga ttatgcacaa actttaaaga gtttcagta   900
tcagcttgcc tgtaggtctc aggccccatg tgctaacaaa gatgaagccg atctcagctc   960
taaacaagcc gcagaagagg tctgggcaag agtggctatg aatagacaac ttcttgatca   1020
tatggattca tggacagcta aatttagaaa ttggatcaat gagacaatat tagtgccact   1080
tgttcaagag attgagtctg tcagcacaca gatgagacga atgggttgtc cagagctaca   1140
gataggagag gctagtatta ctagcttgaa acaagctgcc ctggttaaag cgcctctcat   1200
tccgactttg aacacaatcg ttcagtatct agaccttact ccaaatcagg aatacttgtt   1260
tgaaaggatc aaagaactat ctcaggagg ttgtatgagc tcatttcgat ggaacagagg   1320
tggcgacttc aaaggacgaa agtgggatac agacctgccc accgattctg ctatcatcat   1380
gcatgtattt tgcacctacc ttgattccag attacctcca catccgaagt atccccgacgg   1440
aaaaactttt acttctcagc actttgttca gacaccaaat aaaccagatg ttacaaatga   1500
gaatgttttt tgcatttatc agagtgctat caaccctccc cattatgagc tcatctacca   1560
gcgtcatgta tacatacctg ccaaagggca gaaataatat gtttcataca ttgttgatgt   1620
ttctctacat cataaagacc aaagagtcag gaatgcttgg gagagttaat cttggtctat   1680
ctggtgtgaa tatattgtgg atctttggcg agtagcaagt catatattta attctgacat   1740
ttagactatt tcactgaacc agaagtcgaa actaaacatc tctgagccac tgactcttct   1800
gaaataaaat acacatgggt gtatgttaca gactctttag atttaacaga aaatgtagct   1860
gttatgaaat gtaattgtaa aaatatgtcc cgtatcttct atatcgagac attgccttta   1920
atttttatc gcttttcaga aatttcagtt gactacaaaa ctgcaaccct cggattttt   1980
attgactcaa aatagtgcca ttccccttaa tgaaatagat tttgagtctt tttttcattg   2040
taaccccaa atgagaatca tctacctgat tcttgtacca aaaaaaaatt tttttcagtc   2100
```

195

```
tttttttttt ttaaagaggg tttttgccaa cccaaactgg agggcaggg                2149
```

```
          <210> 396
          <211> 1895
          <212> DNA
          <213> Homo sapiens
```

```
          <400> 396
actgtagacc attagtccag tgcggtggaa ttcatcaacc gaaacaacag tgtggtacag     60
gtcctgcttg ctgctggggc tgatccaaac cttggagatg atttcagcag tgtttacaag    120
actgccaagg aacagggaat ccattctttg gaagtcctga tcacccgaga ggatgacttc    180
aacaacaggc tgaacaaccg cgccagtttc aagggctgca cggccttgca ctatgctgtt    240
cttgctgatg actaccgcac tgtcaaggag ctgcttgatg gaggagccaa ccccctgcag    300
aggaatgaaa tgggacacac acccttggat tatgcccgag aaggggaagt gatgaagctt    360
ctgaggactt ctgaagccaa gtaccaagag aagcagcgga agcgtgaggc tgaggagcgg    420
cgccgcttcc ccctggagca gcgactaaag gagcacatca ttggccagga gagcgccatc    480
gccacagtgg gtgctgcgat ccggaggaag gagaatggct ggtacgatga agaacaccct    540
ctggtcttcc tcttcttggg atcatctgga ataggaaaaa cagagctggc caagcagaca    600
gccaaatata tgcacaaaga tgctaaaaag ggcttcatca ggctggacat gtccgagttc    660
caggagcgac acgaggtggc caagtttatt gggtctccac caggctacgt tggccatgag    720
gagggtggcc agctgaccaa gaagttgaag cagtgcccca atgctgtggt gctctttgat    780
gaagtagaca aggcccatcc agatgtgctc accatcatgc tgcagctgtt tgatgagggc    840
cggctgacag atggaaaagg gaagaccatt gattgcaagg acgccatctt catcatgacc    900
tccaatgtgg ccagcgacga gatcgcacag cacgcgctgc agctgaggca ggaagctttg    960
gagatgagcc gtaaccgtat tgccgaaaac ctgggggatg tccagataag tgacaagatc   1020
accatctcaa agaacttcaa ggagaatgtg attcgcccta tcctgaaagc tcacttccgg   1080
agggatgagt ttctgggacg gatcaatgag atcgtctact tcctcccctt ctgccactcg   1140
gagctcatcc aactcgtcaa caaggaacta aacttctggg ccaagagagc caagcaaagg   1200
cacaacatca cgctgctctg ggaccgcgag gtggcagatg tgctggtcga cggctacaat   1260
gtgcactatg cgcccgctc catcaaacat gaggtagaac gccgtgtggg gaaccagctg   1320
gcagcagcct atgagcagga cctgctgccc agggggctgt actttgcgca tcacggtgga   1380
ggactcagac aagcagctac tcaaaagccc agaactgccc tcaccccagg ctgagaagcg   1440
cctccccaag ctgcgtctgg agatcatcga caaggacagc aagactcgca gactggacat   1500
ccgggcacca ctgcacctg agaaggtgtg caacaccatc tagcagccac ctgcctgctc   1560
ctatgtgccc tcaccatcca ataaaggccc cttggctgtg gcatggcaaa aaaaaaaaaa   1620
agggggggcc gtttaaaaga acccttgggg ggcccaaatt taacccgggc gggcaaggaa   1680
aaattttttt ccttatgggg ggccgaataa aaaccaacct gggaattttg ggaaagaacc   1740
cttattttgg ggggggggaca aattgggcca acctccctac aaaaattaaa ggctttaggg   1800
aaaaaaaaaa tttttaaggg gaaaaggggg aaaaacaacc ggcataccct ggcggttgga   1860
aagttttgtt tacggagtat gatttagaaa aattt                              1895
```

```
          <210> 397
          <211> 2416
          <212> DNA
          <213> Homo sapiens

          <220>
          <221> misc_feature
          <222> (1)...(2416)
          <223> n = a,t,c or g
```

```
     <400> 397
tttttttttt tttttttttca caagttatat tttatttttaa cacgaggatt aacatatagt      60
tacaaggtca atacaagcct ccagtggaag ctctttattt ggtttaattc catctccaga      120
gacaaacagg caactctagg acctttacag tggcgatcgg cctccacnac agcaaaatgc      180
ctccaaagtt tagaattagt gcaacacaca tacgaacgtt ttaaaggtgc tcaacatcag      240
gttaaaatag aattctggac cttttttaaaa agttttttgga tgatataagc acaggaggca      300
gagccaataa gaaacatgaa accaatattt ctggaaaaac acttagcatg aacgtcactt      360
tttgacgtcg tgtaaacttt cttctgcaat gacggatgtt accaaaaggc attgagacct      420
ttgcgctgcg ctggttagac aagccgcagg cttatctcca cggtgagcag gataaaaacc      480
cccaaggaac agcccatgac aaccttctgt gccttttat actttcccat cctacaaagg      540
aaaaactggg taaaggacaa gttcctccct ttcattgcgt ttctaagaac ttttcagggc      600
aggttctttt aaaattagtc atcttacaac acaacagtat tctagcacgg tggcgaagtg      660
acaggcggca gatacggggg aggaaggaga cgttcacggg aaattccaca ttctactcta      720
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tgatacatag acaactgac ctcctctaag aagcccggct ggggcagcag tgagctttc       840
atggagccac gcagactggc ccggaagcaa cacccaggtt caacatttaa gagcactcgc      900
tataacattc tttttggacg caggtggtgg aaaagtttaa aaaacaggcg gaggagtgac      960
ggggggatac aagcatatcc tatactgggg gtgacggtca ttcaaagagc aaattactgc     1020
agcttatatc ttttccacta tgttgcaaga aatgaatcta tcctgaccca taatatgaaa     1080
gatgcgacgc acatgcattc ccgaggctct aaaatcccat tttaaagaac cgtttcacat     1140
cctcgtggag tggagagtgg tccacttgac ttggtgaggt cagaagttcc tgaagatccc     1200
tgtcgtcccc gttggcgggg gagcccattg tggagctgtg gggactgcca cactcaccat     1260
gcacctgttg gtttgcaggg acagaggtgc ggccttgact cttctcaccc tgtgtcatcc     1320
gggcttgtct ttcgtctgtc aagtcagtcc tcctgcgtga ctgatgggtg caccacgctt     1380
aggtcacccg ttgcagggac cggaagtcca tggctctgcc gcaaccctga gcggtttgca     1440
gtcccccccg gggaagaagc agtcagagag gctcacgctc acctacttta aaaacccaaa     1500
gccacttcct cttcacctgc ctgggcctca gcgtctctgc gcttgtggtt tctcgtcccc     1560
gagggctgac tgagctgctc cggaagggtg gtgtgtggtc aaccttggtt ggctgagagg     1620
agcaatttcc tggtttccac aagtaaagac agccccatcc cttgggacct gtcctttccg     1680
tccctgtccc tttggcttct ataggacttc cttgtcttag attcataaac agcaagagga     1740
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gacatcatcc ccaggcttcc gtggcgctct cggtcacagg agctttaggc caatggttcc     1860
tcttgactgt ttttgcccca aatgagagga ggggctgctt tgctttaagg cgtggcggcg     1920
gggggggggt ggtggccaca gattagggga cctcaggttt tcctcaaaaa cccacacagg     1980
gaaagaaact tggctctaaa agcaaactca acgaattcca catgccctga agagcacgtg     2040
ataaaataca agggtggtgg cggcgggatc cctcaaagga ccacgagagg cacgggtct      2100
ttggtgatga aagtgctaac ctcggcgggg tgcggtagct cacacctgta atctcagcac     2160
tttgggaggc tgaggcgggc ggatcacctg aggtcaggag tttgagacca gcctgaccaa     2220
cacggtgaaa ccctgtctct actaaaaata caaacattag ccgggcgtgg tggtgcacgc     2280
ctgtaatcac agctatttgg gaggctgagg caggagaatc gctggaaccc aggaggtgga     2340
ggttgtagtg agccgagatc atgccactgc actccagtct gaacaataga gcgagactcc     2400
cgtctcaaaa aaaaaa                                                     2416


          <210> 398
          <211> 1495
          <212> DNA
          <213> Homo sapiens


          <400> 398
tggccattta ggaaaaattg tccttgggga tcctctaaaa aatccttttg tgtccaatag      60
caccttaaaa aacctgggcc ccagataatt gttgaacctc agatttagga aggaaaattt     120
ccaagctgtc agctaaaggc agtttccccc atttcacaga atatgtggta gaagttccga     180
gtaaggaatt ttttcagcag ccatgaaagc tccctgcata aggaagactc agtgtgcaac     240
```

```
atctgaaagc agtattgcca gagcatgact gtggcaatga agcaaaatgt tccctccacc    300
tatccctccc tcccatgtat aatgcttgaa gggtcagtcc ctgaaataag tagagagaaa    360
agtgtttgct gaaagagcta atacataagt caaccttcac tggtaccaat gaaggcttcc    420
cagttcaaaa ttcaacaccc agaaaaggca gaaattttag ctttaaatta agtttaaatt    480
ttcagttatc ccagtggact aggcatttaa atctgaggag ttccctgaga ttccatatga    540
ggaaatgaaa aacattagct tgtggattaa atttaaagag actgtaagga gaaaaacata    600
ttttatgaca tgcctcttaa ggactcctat tatttcaatg aatttgttac agttataata    660
tgcttgtgat aaaaaggcat tatttattaa gaaatctaaa atgtaataat atttcaatta    720
tatagtttta gagaaccttt cttgcccaac acttttctga tagcaagttg gacatccttg    780
tttctgaggc tataaaccat ggggtttagt aatggagtga caatcgtgta tgtcaccgtc    840
accagcctgt ctttgttgga cacatagttt gctgtaggcc tcaggtagat gaaggaagca    900
cagccataat gaacaataac aacactgagg tgagaggcgc aggtggaaaa cgctttccgt    960
ctgccctcag ctgagggaat cttcaggata gtcctcagaa tgcagaaata agaaacacag   1020
ataaacagaa agggaaccac aagtacaaga actccacaaa tgaatatcac aaatccgtta   1080
acatctgtgt tggtacaagc cagaagaatg actgctgaga tgtcacagaa gtaatgattg   1140
actttgttgg tgctacaaaa agggaggctg aaaactaaat ttactactgt aagagaggcc   1200
aagaagccac caattgcaca ggcagctgcc agttttccac acacctgcca gctcataaga   1260
gtggggtaat gcagagggtg acaaatggca gcatagcgat cataacccat cacacccaat   1320
agcaggcagt tggtaatggc aaaaccaagg aagaagaaca tttgaagagc acaacagttg   1380
aaggagattg tcctggccac agaaagtaga ttgatgagca tcttgggtag aatgacaaag   1440
gtgtagaagt ctcagatgtt gagagaaagc caggaagagg ccattggtgt gtgga         1495
```

```
<210> 399
<211> 2752
<212> DNA
<213> Homo sapiens
```

```
<400> 399
gcgaccgcca gcggctacac ggtacccgcg tgagaagctc aagtccatga cgtcccggga     60
caactataag gcgggcagcc gggaggccgc gcgccgctgc cgcagccgcc gtagccgccg    120
cagccgcagc cgccgctgcc gccgaacctt accctgtgtc cggggccaag cgcaagtatc    180
tggaggactc ggaccccgag cgcagcgact atgaggagca gcagctgcag gaggaggagg    240
aggcgcgcaa ggtgaagagc ggcatccgcc agatgcgcct cttcagccag gacgagtgcg    300
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tggacgagat ccccgagtgg gtgcaccagc tggtgatcca aaagctggtg gagcaccgcg    540
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tcgtgtctca cgtggacccc atccacatct tcgagcgccc catcgtgtcc gtgtccttct    660
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aaccagtgct ttccctgccg gtgcgcaggg gaagcgtgac tgtgctcagt ggatatgctg    780
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tcctcaggaa gacaagatta gatgcacccc ggttggaaac aaagtccctg agcagctccg    900
tgttaccacc cagctatgct tcagatcgcc tgtcaggaaa caacagggac cctgctctga    960
aacccaagcg gtcccaccgc aaggcagacc ctgatgctgc ccacaggcca cggatcctgg   1020
agatggacaa ggaagagaac cggcgctcgg tgctgctgcc cacacaccgg cggaggggta   1080
gcttcagctc tgagaactac tggcgcaagt catacgagtc ctcagaggac tgctctgagg   1140
cagcaggcag ccctgcccga aaggtgaaga tgcggcggca ctgagtctac ccgccgccct   1200
cctgggaact ctggctcatc cttacgtagt tgcccctcct tttgttttga gggttttgtt   1260
tttgttcatt ggggggtttt tgttttttgg tttttgtttt ttttgattct atatattttt   1320
ccttggtttt gttgcctgtt aaggctgaac aatagaattg ccaggacct aggttctcat   1380
attcttggta ttcctcctgg atggaaaggc tgttggcatc aatagggac agaggctgat   1440
gctggagtgg ccagtagagg tggtggagca gagcacccat cttttaagtg gggctgtatc   1500
aggctgggtt tatttaaaag caacaaaatg ttttggttaa gaaaattatt ttgctttcag   1560
tgtaaatctt cgcagtgttc taaacaaagt tcagtcttct gcttgcccct ttccctcact   1620
gatgtctgca cttggttgag gtctcctgga gcctcacagg ctctgctgtt ctccacttct   1680
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<212> DNA
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<210> 406
<211> 2001
<212> DNA
<213> Homo sapiens

<220>
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agccacccaa cccaggtcct ccagaggcct tgctggacag gaagagggtg aggcgtgagc   1920
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<210> 407
<211> 1652
<212> DNA
<213> Homo sapiens

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<210> 408
<211> 668
<212> DNA
<213> Homo sapiens

<400> 408
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aacctggcct ggtggacctc tgctgccgcc tggtgagtcc tgagcgggag gtgggtagag       180
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gaccacctgc actcggctcc ccgtgcgctg caggtccctg ttccagcagc ttctctacgg       300
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ccagtactac ttcggctcgg taaacgcctc ctacaacgcc atcatcgact gcggaaactg       600
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atgccgaa                                                              668
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        <211> 1854
        <212> DNA
        <213> Homo sapiens




        <400> 409
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        <210> 410
        <211> 1147
        <212> DNA
        <213> Homo sapiens




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gcgagtggtt acgggtttcc atcactgctg ctttgagtgt gtgccctgtg gggctgggac    660
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<210> 411
<211> 2234
<212> DNA
<213> Homo sapiens

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207

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        <211> 2457
        <212> DNA
        <213> Homo sapiens


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        <211> 1042
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208

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        <213> Homo sapiens




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cctcgggctt tgcagacttc acctctgtaa gttgagtcct ccgcctccgg gccaccccac     360
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aacagcccctt ttgaaagcca aaccaaaaag agctccaaaa acctgtggag caaagttaag     960
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        <210> 414
        <211> 1849
        <212> DNA
        <213> Homo sapiens




        <400> 414
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cgaggaggac acgtgactct tcggtgtcac tatcgtcata ggtttaacaa tttcatgcta     180
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cactccccca ctgggtggtc ggcacccagc aacccgtgg tgatcatggt cacaggaaac     360
cacagaaaac cttccctcct ggctcaccca ggtcccctgg tgaaatcagg agagagagtc     420
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```

```
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```

<210> 415
<211> 2555
<212> DNA
<213> Homo sapiens

<400> 415

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tgccccaccg cttgcatctg tgccactgac atcgtcagct gcaccaacaa aaacctgtcc   180
aaggtgcctg ggaacctttt cagactgatt aagagactgg acctgagtta taacagaatt   240
gggcttctgg attctgagtg gattccagta tcgtttgcaa agctgaacac cctaattctt   300
cgtcataaca acatcaccag catttccacg ggcagttttt ccacaactcc aaatttgaag   360
tgtcttgact tatcgtccaa taagctgaag accggtgaaa aatgctgtat ccaagagtt    420
gaaggttctg gaagtgcttc tgctttacaa caatcacata tcctatctcg atccttcagc   480
gtttggaggg ctctcccagt tgcagaaact ctacttaagt ggaaattttc tcacacagtt   540
tccgatggat ttgtatgttg gaaggttcaa gctggcagaa ctgatgtttt tagatgtttc   600
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gtcgcctgtg gtctgactcc aggcactcgc gtcaggtact tctgctccag gatagcttta   840
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ctgtgctttg gacatttgaa ttaatgtaaa tatatgtaat ctgtgacttt gatattttgt  2460
```

210

```
tttatttggc tatttaaaaa cataaatcta aaatgtctta tgttatcaga ttatgctatt     2520
ttgtataaag caccactgat agcaaatctc tctcc                                2555
```

```
        <210> 416
        <211> 2950
        <212> DNA
        <213> Homo sapiens
```

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        ctcccacaag tttgatttcg aactgcagga tgtgtccagc gtgaatgagg atgtcctgct    120
        gacaactggg ctcctctgta aatatacagc tcaaaggttc aagccaaagt ataaattctt    180
        tcacaagtca ttccaggagt acacagcagg acgaagactc agcagtttat tgacgtctca    240
        tgagccagag gaggtgacca aggggaatgg ttacttgcag aaaatggttt ccatttcgga    300
        cattacatcc acttatagca gcctgctccg gtacacctgt gggtcatctg tggaagccac    360
        cagggctgtt atgaagcacc tcgcagcagt gtatcaacac ggctgccttc tcggactttc    420
        catcgccaag aggcctctct ggagacagga tctttgcaa  agtgtgaaaa acaccactga    480
        gcaagaaatt ctgaaagcca taaacatcaa ttcctttgta gagtgtggca tccatttata    540
        tcaagagagt acatccaaat cagccctgag ccaagaattt gaagctttct ttcaaggtaa    600
        aagcttatat atcaactcag ggaacatccc cgattactta tttgacttct ttgaacattt    660
        gcccaattgt gcaagtgctc tggacttcat taaactgggc tttttatgggg gagctatggc    720
        ttcatgggaa aaggctgcag aagacacagg tggaatccac atggaagagg ccccagaaac    780
        ctacattccc agcagggctg tatctttgtt cttcaactgg aagcaggaat tcaggactct    840
        ggaggtcaca ctccgggatt tcagcaagtt gaataagcaa gatatcagat atctggggaa    900
        aatattcagc tctgccacaa gcctcaggct gcaaataaag agatgtgctg tgtggctgg     960
        aagcctcagt ttggtcctca gcacctgtaa gaacatttat tctctcatgg tggaagccag    1020
        tcccctcacc atagaagatg agaggcacat cacatctgta acaaacctga aaaccttgag    1080
        tattcatgac ctacagaatc aacggctgcc gggtggtctg actgacagct gggtaactt     1140
        gaagaacctt acaaagctca taatggataa cataaagatg aatgaagaag atgctataaa    1200
        actagctgaa ggcctgaaaa acctgaagaa gatgtgttta tttcatttga cccacttgtc    1260
        tgacattgga gagggaatgg attacatagt caagtctctg tcaagtgaac cctgtgacct    1320
        tgaagaaatt caattagtct cctgctgctt gtctgcaaat gcagtgaaaa tcctagctca    1380
        gaatcttcac aatttggtca aactgagcat tcttgattta tcagaaaatt acctggaaaa    1440
        agatggaaat gaagctcttc atgaactgat cgacaggatg aacgtgctag aacagctcac    1500
        cgcactgatg ctgccctggg gctgtgacgt gcaaggcagc ctgagcagcc tgttgaaaca    1560
        tttggaggag gtcccacaac tcgtcaagct tgggttgaaa aactggagac tcacagatac    1620
        agagattaga attttaggtg cattttttgg aaagaacect ctgaaaaact tccagcagtt    1680
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        tgttgggtgg caatttgatg atgatgatct cagtgttatt acaggtgctt ttaaactagt    1920
        aactgcttaa ataaagtgta ctcgaagcca gtaagtgctc tgggacctca ttattttaag    1980
        cctggtagtt aaaaaaaatc ttgcaaaagg atgccaaaga agataaggac gtggaaagaa    2040
        gtttaatttg atgattaaaa acatgcaaca gttttgtgtc ttagctctcc tactaggatt    2100
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        aaagattatt taaaaccaga gaggaaactc catatatgtt ctttaatcca aacagtttaa    2340
        ttcaagcaat ctggaatata aaaagcactt tctgatatta gaaggagatc agactcccaa    2400
        aaaagatcag cattctttag tcaagcaaaa cttggaagtt acaaacagc  taaatcagaa    2460
        gcttgaaatt caggtcctct ccagtacctg ctacattata tgtaattcca acatgactt     2520
        cagagattaa agaagaaagg gaagatgttt cccattcttt tgtaccctat ataaactaag    2580
        ggtaccctgc cctaatcttt tttccaacac ttccccaaat aacccttcct tacaaagaaa    2640
        gaagtctaag agaactctct catctaaata tatttaagta gaggcaagcc tgaaaaaaac    2700
        acaaaaacct aaatggtgtt aggctgtggt tcacctattc tcatggcacc tcaaattaat    2760
        ggcttgggtg ttggtgtagg taacgcttgg cctgtatgtt gaggtagtca ctagataaaa    2820
```

```
ttctgggcac aacatccgtt tagcaattgg gcatacattc tacagattta gccataacgt   2880
tctgaagctg attattttac agatcaacta attaattcct ctccctaact ttacagatga   2940
gaaagctcag                                                          2950
```

```
        <210> 417
        <211> 850
        <212> DNA
        <213> Homo sapiens

        <220>  .
        <221> misc_feature
        <222> (1)...(850)
        <223> n = a,t,c or g
```

```
        <400> 417
ctttcacaaa aatccatgaa ttattcttta ataaaagaaa ctcttggccc cgcttttttg    60
gatacacaga atgctttcca ttgaatcatt tggtcataat ccgggtacaa agcaaattta   120
acacgtgtga gagatgcaga aaaaggtccc ttctatgtac accttgccaa atacaagaac   180
ataaagaaag aaaaaagcaa agtttaagcc tttaggtcat ttgtaaaatg ttgccaaacc   240
catgctgcta cttttaacag agaagtctga gttttaaaat tcaaacgttc ttttcttaca   300
aagaaaaagt gcctctatct gccaagcgca tgatcttatg agcttcagat agaaaagtgg   360
ctatgacttg tgactgtttt tggttcagaa caatgctaga tcaacatgca agttgtatgg   420
aggtggggac agaaagggag cggcaggctg gggtggctgg taatgtttga tccctctgga   480
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ctgcaactac tctgtgaggg acacaactca ggtttgtgag tccccggaac ttctgatgat   600
actaaggcat aaataatgtt ttcaagccag taataacaag agcctgttag ttccaattat   660
gcatcgttct agagacagca aatcattcta gagcatggct ctgcattggg atctgggncg   720
ttttatnttt ggggtccgcg cacgtccaca atntcaaann nncggcgccc aggggtcccg   780
cccccgaga cgaattagat agatggaagg tgtgaatggt ggtaaagatg gacaaagtga   840
tgcggggtgg                                                          850
```

```
        <210> 418
        <211> 360
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 418
gagataaccc acattgttgg agagacagct gcctttctat gccccaggct gaggctgaga    60
cggggtggga aggatggatc cccaaagcct gggttcttgg cctcagtgat tccagtggac   120
aggcgtccag gtgagtagga catccagaag atttggactt ggagatgttt cccctatt     180
tgagtgtcca gattaagagc tggctgccct agtcatttta aaacatgctg ggaatccaag   240
ttgggtctcc tcattttaat gatgtctagg ctgagggctg ggcctttcat tcttgagtcc   300
ctgggctcag aagtgggtct ctttccctcc tctcagggta ctgaggaagg accccaggtg   360
```

212

```
<210> 419
<211> 949
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(949)
<223> n = a,t,c or g
```

```
<400> 419
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aattcttata tgtgtatgtt caacagatac tgaatctcag gtgaagcaaa gtgccttcat   120
cattgtagca aatcctacat ttaaatgaaa tcagataagt actggcatat aatcaaaatt   180
tattttttat gttgattccc aatcaatgat tttttttttt caaacaccaa caagacataa   240
agtacttatt atggaatttt gtccatgtgg gagtttatac actgttttag aagaaccttc   300
taatgcctat ggactaccag aatctgaatt cttaattgtt ttgcgagatg tggtgggtgg   360
aatgaatcat ctacgagaga atggtatagt gcaccgtgat atcaagccag gaaatatcat   420
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tgatatgtat gagagagcag tgctaagaaa agatcatcaa gaagaaatat ggagcaacaa   600
gttgatcttt ggaggcattg gggtaacatt ttaccaaggc aagcctactg gatcaactgg   660
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gggaccaatt tgactgggag tgggaagaca tgcctgtttc ctgcagtcct tcctcggggg   840
tcctcagggt tcctaactta ccccctgttc ttgcaaaaca tccttgaaag cagatcaagg   900
aaaaagtgtt gggggttttg accaagtttt ttgcaagaaa actagtggg                949
```

```
<210> 420
<211> 986
<212> DNA
<213> Homo sapiens
```

```
<400> 420
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gggtgaaaac agcatctcac tggagtctca aaagtgtatg aatcttctgg tagtgcaagg   120
atgggataag atggccaggg aagtcagatg gaaaatcccc aagattcttt ttgctactga   180
tttctataat taaaatatga catatgtaag ggactagtgc atgatattca ataaatgtca   240
gttgtctttc ctaactaggt tcctcacagg ctaggttatg cctagatatc atcatcctcc   300
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aatgcagttg gttagctgtc tccccatcct cccaactcac tattccaggg aggggctgaa   420
aacagaagtg gctcccctga agtctagtta gcatgtcatg acagagtcca catgaagggc   480
tgtgggctgc aactttctag tgcacagtcc tctctttttg gcgatgataa ttgtagggaa   540
agaagcgcac acgcatgctg atttcacgag ctgtcttcag gatctcaaca gccttgctgt   600
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ctgctctatg tgcatcagag tcaggaatca ccttggagat gaagatgcct agctgggagg   720
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aaggaatccg ctgtccatc tcgggcaagg cccagtgggc agtccacagc gacctcagac   960
tccgctcaca cgaaatcgtc gacccg                                         986
```

<210> 421
<211> 1209
<212> DNA
<213> Homo sapiens

<400> 421

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ggcacgagca ggtctctgcc cttcatagac gcataaaggc tatcgtagag gtggctgcaa   60
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cgagagagaa gcttccttgg acagaatttg ctgagtcagc agaggatggg cccaccacca  180
gattctgtca gaagctggcg aagaaccatg acatggtggt ggtgtctccc atcctggaac  240
gagacagcga gcatggggat gtttttgtgga atacagccgt ggtgatctcc aattccggag ·  300
cagtcctggg aaagaccagg aaaaaccaca tccccagagt gggtgatttc aacgagtcaa  360
cttactacat ggagggaaac ctgggccacc ccgtgttcca gacgcagttc ggaaggatcg  420
cggtgaacat ttgctacggg cggcaccacc ccctcaactg gcttatgtac agcatcaacg  480
gggctgagat catcttcaac ccctcggcca cgataggagc actcagcgag tccctgtggc  540
ccatcgaggc cagaaacgca gccattgcca atcactgctt cacctgcgcc atcaatcgag  600
tgggcaccga gcacttcccg aacgagttta cctcgggaga tggaaagaaa gctcaccagg  660
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ggctgtcccg tagccgggat ggactgctag ttgctaagct cgacctaaac ctctgccagc  780
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tgcctgcctt ggggtgagga agacacctct gccccagtgg attagcaagt gtggcaggct  960
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tggaaatgtt tggggactag gtagaggtga atgtactaaa tgccactgaa tttgtatact 1140
tcagaatgtt tgttatgtaa attttacctc aactaaaaaa aaaaaatgcc caggtaaaaa 1200
aaaaaaaaa                                                         1209
```

<210> 422
<211> 5214
<212> DNA
<213> Homo sapiens

<400> 422

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ccttctagtc atgagggcca caatatcctt gtcaagtttt tccatcttaa atttggacag   4500
atctggttgg aatgttatgc atgtgtaatc ttcaccatca aaatgtttaa ttttggcttc   4560
agaagtcttc atcatattat tcatccatgt ctgcttaaaa ctgtgtttgt attctttgca   4620
agctgtttct actgtaaact ttgtactgaa aatattacaa agttttgcac cataaccatt   4680
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```
acgaccacct gtaacttttt tctcatcatc atcatagtta ctggatgtta aaagctgtcc      4740
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cccattattc caaatgctta taatgttaga ttcaggatca atagaaactt taatacaagt      4860
catgttctta tccctctgtt tattgtcagc agcattaacc aaaatttcat caaagatctt      4920
gtataaacct ggcacaaagg taacctccct gcaattcatt cctacatctt catcatacac      4980
ccacatgaac tgcgtcaatg gctccactga cccaatatat gtatcaggac gaagaagaat      5040
gtgttcaagt tgtgtcttct tctgatacac tctctcaaca gacaacttct ttgaagaatc      5100
atttttgttg gcagtttctg actcttcttt ttttgcagca ttgttcaccc aggtcagtgc      5160
cccgttgccg ccgcccacgc cggctcccgc gccgcagcca cccgacttgg ccat            5214
```


        <210> 423
        <211> 474
        <212> DNA
        <213> Homo sapiens

        <400> 423
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acaatgatcc ggtgagtgga agcctaatgg gagaatgaca gccttttcct ggggaaagac       120
attcttctgt gcacaggtca gaccccagag ctaaatcaag tacatcccag cccaaaggcc       180
cctcccaaca ctcatcattg caaggcacat agtagccact gagtacacac ctcatggcct       240
agctaacaca ggtgttactg tcctctaagc ccttacggga ccctagaaga tctcaaaagt       300
agccaccaac tggggcaggg taaggaacca agaagacaca tctcagagac aacaaatcga       360
agtcttcctt taatctccaa aacacaaatt agaagctgcc accacatcta cattccatct       420
ataaaccaag tgatatatct gaaagcaaag gccacaaaca tgaaagcaat ttcc            474
```


        <210> 424
        <211> 1453
        <212> DNA
        <213> Homo sapiens

        <400> 424
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tgaggactgc ttggtcacag gcactgtgaa tgctgggata gttgatctga tcaccaagac       180
ggctactaag tcactagcag ggtgggtggc gtatacagcg tggatgtgct ggaccaaggg       240
atgactcaca tccccggccg gctggagccg gacagcgaga gatttcatca cgctactcag       300
aagggcacac catttgagac ttaaaattct ttatttctgg aattttccat ttaatatttt       360
tgaactgcag ttgactgcag gtaacaaact gtggaaagcg aaaccataga tacgagcggg       420
ctactgcgtt caaaaggctc ttcaactgtt gtggatcctc tgatgttctc ggagatggtt       480
taggtggtta catgccttcc cgcactcctt acattcgtag gatttcgccc cactgtgcgt       540
tttctgatgt tgtgtaagct gatggccgtg actaaagctc ttcccacatt ctgtacaccc       600
atagggtttc accccggtat gaattctctc atgtttcacg aggctcgatc cataaatgaa       660
agccttccca cactccttac atttatacgg ggtttcgcct gtgtggattc tctcgtgctg       720
agtgaggtga tagccacaat tgaaggcctt cccacattct gtgcacttgt acggcttctc       780
gcccgtatgt atcctctcgt gcttaacgag gctcgaaccc cagcgaaagg ccttcccaca       840
ctccttacat tcgtgaggct tctcaccggt gtggatcttc tgatgctgag taaggtaatt       900
gactcgagta aaggccttcc cacattcttg acattcatag ggtttctcac ctgtgtgaat       960
tctttttatgc tgaatgaggc ttgaaccaca aataaaagcc ttcccacagt ctttacactc      1020
```

```
gtaaggcttc tccccactat gaattctctt gtgctgaata agtttataca cacggctaaa        1080
ggtcttccca cagtctttgc attcgtagtc tttctcccca gtgtggaatc tctggtgctg        1140
agtgagctca tcaccacgcc gaaaggcctt ccacagtct ttacattcat agggttttc         1200
accagtatga atcctcttat gaataacgag gcttgagccc catcgaaaag ccttcccaca        1260
gtctttacat tcgtagggct tctccccagt atgaattttt tgatgttgag taagctgatt        1320
gccccaacgg aaggccttct tacattcttt acattcataa ggtttctcac cagtatggat        1380
tttctgatgg tgactaagtt gatagccacg actaaaggcc ttcccacagt ccttacattc        1440
aaaggaattc tcc                                                          1453
```

```
        <210> 425
        <211> 1131
        <212> DNA
        <213> Homo sapiens




        <400> 425
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ccctgccccc caagagggaa gccagagcta gcggggccag cactgctcag gaggcaaggt        180
ggcctacctg tcgcacaccc ggaggaggaa atcattgacc aggctctcgt gccggctgca        240
gatgcttctc ttggaaggca ctcttgagcc agtcctcaat gctgcacacc tgcacgcggc        300
tggagtgcca gcagatggag aggctgcgga gtgccgggcc caggaggaag ttgtccttct        360
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tgttctcagg ctacagaaca aggaagaagg agcagtggtc aatgacatca gtatctcgat        840
gacctctacc ctctccatgt gatgacaatc ttactgaaga gccatttttt caccatgcta        900
aaaaggccag ttgggtccag cagctttgcc tctctaccct tttatcacca aagtatactg        960
ctgagaaaga atcaaatgaa aagaaaaaag actcaacaag acctcactca tattaactgg       1020
actctacaag cagtgagcat ccagacctgc atttggttac aaaagaagcc ttcaagctat       1080
tttcatcagc ttcctaatca agttaaaaaa taaaccacaa aactgagaaa a              1131
```

```
        <210> 426
        <211> 551
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(551)
        <223> n = a,t,c or g




        <400> 426
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tggcagaggg tctcttgaga cacagccact gcccctgctt ggtggtcgtg acttgggacg        120
```

```
cagcctgcct  gtgactggag  ctggggggtga  cgggtaagat  gagtggagat  gttgggccag      180
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tccagagctc  tccggatgcg  cttgtgaaca  gcaagttact  aggaaacctc  tgctgcgtct      300
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ttggacgtgc  c                                                              551
```

```
            <210> 427
            <211> 1579
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 427
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agccaagatg  gtaccactac  cgtctagcct  gggtgacagc  cagaccctat  atcaaaaaaa    1560
aaaaaggggg  gggcccttt                                                    1579
```

```
            <210> 428
            <211> 413
            <212> DNA
            <213> Homo sapiens
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<400> 428

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gctgcttcct tcctttccag aggatgcgga tcaaacctca ccaaggccag tacataggag   120
agatgagctt cctacagcac cacaaaggtg aatgccgacc acagaaagat tgagcacgac   180
aagaaaatcc ctgcgggcct tgctcagagc ggagaaagca tttgcttgga caagatccga   240
agacgtgtaa atgttcctgc aaaaacacag actcgcgttg caaggcgagg ccgcttgagt   300
taaacgaacg tacttgcaga tgtgacaagc cgaggcggtg agccgggcag gaggaatgag   360
ccttcctcag gggttcggga accaccttct ctcaccagga aagactgata cag           413
```

<210> 429
<211> 1567
<212> DNA
<213> Homo sapiens

<400> 429

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gaccctcata ccacatgacg tggcggcgtg gggccaggaa ctagggaagg cagaaggcgg   240
gcgcagtggg cagctctctg ggctcagctt gctgaggggg cctcctgtcc tggctctttc   300
tgggagacct cattcttctg cccatgttcc tgcctcacac attccccgtg atgaacgctg   360
tgggcggggc ccggcctgtg ccctcagtcc cacagctcct ctagtgtacc tgccccgtgg   420
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tacacgaaga tttgtgatcc aggcctcact tcctttgagc ctgaggccct tggtaacctc   960
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tggctgaggc aggagaatga tgtgaacctg ggaggcagag cttgcagtga gccaagatca  1500
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ttattta                                                            1567
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<210> 430
<211> 728
<212> DNA
<213> Homo sapiens

<400> 430
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ctttccacac catggtccaa gggaagggct gccctgtctg aagagtcccg cccacttgta      60
ggatgagacg tggaaaatat tgttgctgta acttaaaaaa caagaccagg ggggttggct     120
gggagcaccg gccagcaggc cctgctgagc ataaaccccc tccactggag aaggcgtggc     180
ccctgcccac ctggacccct ctggaaatga gggaagtgct aacagcagtg cccatcccac     240
aagcattaaa ctcgggaggt ggagactctc cagcagaaag ctgggcagca gagtggtcct     300
gcccctcggc ccacaaaggg ccttggccga gcatgggcat gcctggtgtg tgcccactgg     360
ggtccatccc tgccagtggg gttccaggga cctcggggac cgggctgctt gggcccttgg     420
actctaggtg agccgtgaga gcgggctggg gcaggcggag cagctgcctg cagggcaggg     480
acacggtcag gggctacctc ccggacaccc tggcctctcc acaggcagct atccatgatg     540
ctgatgctgg cgcagtcaaa cccgcagctg ttcgcgctta tgggcacccg ggcaggcatc     600
gccagggagc tggagcgtgt ggagcagcag tctcggctgg agcagctgag tgcggcagag     660
ctgcagagca ggaaccaggg ccactgggct gactggctac aggcgtacag agcccggctg     720
ggacagga                                                             728
```

<210> 431
<211> 1524
<212> DNA
<213> Homo sapiens

<400> 431
```
gaaatggtac tcttttcatc atggtgatgc atatcaaaga tcttgtgagt gattacaaag      60
aatgatggtt gtagaggaaa cccttacctt ggtaggaagc attactatta agggactgct     120
ttttttttta ggttactgaa aatggagctg acccaaatcc atatgtcaaa acatacctac     180
ttccagataa ccacaaaaca tccaaacgta aaaccaaaat ttcacgaaaa acgaggaatc     240
cgacattcaa tgaaatgctt gtatacagtg gatatagcaa agaaacccta agacagcgag     300
aacttcaact aagtgtactc agtgcagaat ctctgcggga gaattttttc ttgggtggag     360
taaccctgcc tttgaaagat ttcaacttga gcaaagagac ggttaaatgg tatcagctga     420
ctgcggcaac atacttgtaa actagtgaat gtctgagctt tggaagcatg aacagttata     480
aacgtgcatg catacatgca cacacacaca gacacacaca cacacacttg ttaattttgt     540
atagtatttt tatacttgga cagaacttat aaagttaaat atacttgctg catttcaaca     600
catctgttgg accaacagtc ataactaa cctttttgaa tttttggaag ccattgctgt     660
tttaaagtca ttatgtagaa tgctacaaac cctaaactta atatatacta attcctgaaa     720
aagactttga gacagtacta tgtcagttca gccacctatt ttgcattgtt ttctataagg     780
aggcaaagca tatgtgtttt cctgttatgc accttttata gcctttacca ctgtgtaatg     840
ttcacaaaca ccaaagtaaa ggaaaaatgc aggatgttac cgtaaaatcc agctgctatt     900
catggagctg aaaaacaaag cacaaataat agatagctaa gttaagaact actaagtagt     960
ttatagaagt agggaaaaac gtaatactgc tttttattca tgtctttaaa gcctttttca    1020
gaataagtgc caatcactga tgttgtaaat aatggtgcct taactttata tgcttccctg    1080
gcacttcgtt tctgattttt ttcctgattt gataaataat tagtacatag ttttcactca    1140
cttgcagctt actaaagaca agaaattatg tacatgtact aatgttttc ccacaaaaaa    1200
atcctttact tctgatgtat gaattagtta tctaaatagt taagcctaat acctgaataa    1260
gactcaccaa tgtgattgta caataaattc tatcattcca ttaaaatcct acatttattc    1320
ccaggaatgg taatttcacc tccctacatc tatactccac tccctcagta aataagtgaa    1380
aattgttaac ccatgtgccc attcctgagt agggcagact cttcacaaga ggcccatgac    1440
aagaattcta gggtccagat tgaactttaa tatagacctt tgtctgtgta gaccagtttg    1500
tcttgtaaac tgtcttactt atgt                                          1524
```

<210> 432
<211> 1908
<212> DNA
<213> Homo sapiens

```
        <400> 432
gtctctatgg aattatagct cacctacttt tgggggaatc atgtaaggta attttatttc        60
attatgtatt actagaatgt attgttttaa aatgtgtcta ctttttttgaa gtgtcatttt       120
gttgttgttt tcattgagat ggggtcttac tatgttgccc aggctggtct cgaactccga       180
acctcaaatg acctgcccgg ctcggcctcc caaagtgctg ggattatggg catgagtcat       240
tgcatccaga caaaagtgtc attgtttaat cttgatttga aagaacttta ggtatttaaa       300
acattatgtg gttcttttgt gcaagcgctt tatccctaag tcgtttgatt atccagggtt       360
gaaagcaact ctctctgact tctgcactca gaaagcgctt ggtctaattg tgttctcctt       420
cctgtctctt agcttcacag gataatgcag ctggctgtgg ttgtatcaca agtacttgag       480
aatggttcct cagttttggt ctgtttggag gaaggctggg acatcactgc acaagtgaca       540
tccctggttc agttactcag tgatcccttt tataggacac ttgaaggctt ccagatgttg       600
gttgaaaaag agtggctctc ttttggtcac aaattcagtc agaggagcag cttgaccctc       660
aactgtcagg ggagtggttt tgctccagtc ttcttacagt tcttagactg tgtacaccag       720
gttcacaacc agtatccaac tgagtttgaa ttcaatctct attacttaaa gttcttggct       780
ttccactatg tgtctaatcg ctttaaaaca tttctcctgg attcagacta tgaaagatta       840
gagcacggaa ctttatttga tgataaagga gaaaagcatg ccaaaaaagg agtctgtatt       900
tgggaatgta ttgacagaat gcacaagagg agtcccattt tctttaatta tttatattca       960
ccattggaaa tagaggctct aaagcccaat gtaaacgtct ctagcctcaa gaagtgggat      1020
tactacatag aagagaccct gtccacaggc ccttcctatg actggatgat gctaaccccc      1080
aagcacttcc cctccgaaga ctctgacctg gctggagaag ctgggccacg gagccagagg      1140
agaacagtgt ggccatgcta tgatgatgtc agctgtactc agcctgatgc tctcaccagc      1200
cttttcagtg aaattgaaaa attggagcac aaattgaacc aagcccctga gaagtggcag      1260
cagctgtggg aaagggtaac cgtggacctt aaagaagaac caagaacaga tcgctcccaa      1320
agacacctgt cgagatcccc aggaattgtg tctaccaacc taccttccta tcagaagagg      1380
tctctgctac atctcccaga cagcagcatg ggggaggaac agaattccag catctcccca      1440
tccaatggag tggagcgaag agcagccacg ctctatagcc agtatacatc caagaatgat      1500
gaaaacaggt cctttgaggg aacactttat aaaagagggg ctttgctgaa aggttggaag      1560
ccccgttggt ttgttttgga tgtaacaaaa catcagctgc gctactatga ctcaggtgag      1620
gacacaagct gtaaaggcca cattgatctg gctgaagtag aaatggtcat ccctgctggc      1680
cccagcatgg gagccccaaa gcacacaagt gacaaggctt tctttgatct caagaccagc      1740
aaacgtgtgt ataacttctg cgcccaggat ggacagagtg cccagcaatg gatggacaag      1800
atccagagtt gtatctctga tgcctgatgc ccatggtcaa cccacgcaga agaaacagaa      1860
gaactcatgc tgccagatag atagaacaag aagcatggat ccttgagg              1908
```

```
        <210> 433
        <211> 1714
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 433
tttttttttt ttgacaagtt tgcaagtttt attgaattaa tggctggctt tcacagatgt        60
taatcactgg cgggcggttg aataggggga acaggaaaat gctctccaga ggttcccact       120
gaagcccttt catctgccct gccccaaccc accactgaag ccagaggtca tgggagttgg       180
gatctaacta cactctgtga acttaccacc acccattcca tccccaagcc catattttat       240
ttgggactag gccactgatg cccgggccct tcctcttcca gtagggtggg agggtgggag       300
gtggggacac ggaccaaccc tcaaggaaag aaaagaggtt aaggtggggg gttttgctga       360
atgtctaaga aatgtcagtg gaacagggct ggggcacggt ggctcacgcc tgtaatccca       420
gcactttggg aggccaaggc aggtggatca cctgaggtca ggagttcgag accagcctgg       480
ctaacatggt gaaaccccat ctctactaaa aatacaaaaa ttagccaggc gtggtggcag       540
gtacctgtaa tcccagctac ttgggaggct gagacacagt ctcgctctgt ggcccaggct       600
ggatggagtg cagtggtgca atctcggctc actgcaacct ccgcctcccg ggtttaagca       660
```

```
aaattatcct gcctcagcct cctgagtagc tggattacag gcaggcacca ccacgtccgg    720
ctaatttttg tattttttagt agagatgggg ttttgccatg ttagccaggc tggtctcgaa   780
ctcctgacct caggtgatcc gcctgccttg gcctcccaaa gtgctgggat tacaggcgag    840
agccaccacg cccagcctct gcttcgtgag ttttcttttcc cctgaggcac cctctgagtt   900
ctccacgtgt cagacccatg tccaatgcac cacgctcctt ccttcacacc atgaaagccc   960
cgaagtaaga ccgggtacca tcacgcagtc gaaccaggcg ttcatccagc acacggacga    1020
ccacctcctc cccagcctcc aggtgtacca caccacccag gaagctgctg tcccaccaga    1080
cccgggagct gctggtggcc cgtccgcagg gtgactgctg gctgaccaac agctccagct    1140
cctcggggta gcggggtgtg cgcttgtaga ggccgtgggt gatggtgctg gccaggccca    1200
gcgggcagcc cacaccgccc agctgcacct tggagtagat gtagtagtag ccagctttgg   1260
tgaccacaag ggccccatcg tggtagctga ggcccctcag gaaggccagg cccagctgag   1320
tctcccataa cagcggcccc ccgctgccgg tcaagctgga gttggcccct gtgagatgcg   1380
ctgctgggtt gacctcgtga gaccttcgct cttgtatcag ctgctcccag gagcctgcag   1440
gtccgtcagg caggcgggtg accatctctc ctagacgcca gtgcagctgc aggaggaacc   1500
agccttggac ggccagccca gcccccatca gcaacagcaa gagacccaga cccacccggg   1560
ccacactgca cgactgtctc cggtggcttc gtcccagcct cgtgaatggg atgtcggtct   1620
gtccatccac cacaaacact gagggccgta cgacactctc ctccatgccc aaggtctctg   1680
gagcagggct gacacgcctg ggtccttcaa cctc                               1714
```

```
        <210> 434
        <211> 478
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 434
tttcgtcaga gatagcagag cgccgagttg gggccacgaa ggcgtgaggg gagtcgtcgt    60
ccctcctgca cgaaagcgtc taagccttgg cgacgccgcc ctgggggacc cacgtcaggc   120
ctgggatagg gaccgctgtc cccgggtccc taccaatgtc gcccgtcgct cccggcccag   180
ctctacccgc agagtctgat ggcagcggcc actctgagga cgccaactca ggtgagtgcg   240
gcgtcttccc gtcctcacac accttccccc acccacgttc taaagccatc agtgaggggc   300
gcctgctcga gtccccgctg cccagggtcg gggacactga ggcgttcgtg ggtggggccc   360
ttttttttgac actgcgtgtg acgaggtgtg ggagagcgtg acaggcggag gaaccggcgc   420
gtgcaaaggt tgaggcgcga ctgagccagg agaattcgga aagctgtttt ctgcaggc     478
```

```
        <210> 435
        <211> 1893
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 435
cagcagcgcg caggtcctca ccatagctct ggtggccacc tctgtcccgc catgctgctc    60
accgacagtg gccagggccc acagcaccaa gaggcttggg ccacaaagta aagggtcgcg   120
gagcctcgcc ggccgccatg tggagctgca gctggttcaa cggcacaggg ctggtggagg   180
agctgcctgc ctgccaggac ctgcagctgg ggctgtcact gttgtcgctg ctgggcctgg   240
tggtgggcgt gccagtgggc ctgtgctaca cgccctgct ggtgctggcc aacctacaca   300
gcaaggccag catgaccatg ccggacgtgt actttgtcaa catggcagtg gcaggcctgg   360
tgctcagcgc cctgggcccct gtgcacctgc tcggcccccc gagctcccgg tgggcgctgt   420
ggagtgtggg cggcgaagtc cacgtggcac tgcagatccc cttcaatgtg tcctcactgg   480
```

```
tggccatgta ctccaccgcc ctgctgagcc tcgaccacta catcgagcgt gcactgccgc     540
ggacctacat ggccagcgtg tacaacacgc ggcacgtgtg cggcttcgtg tggggtggcg     600
cgctgctgac cagcttctcc tcgctgctct tctacatctg cagccatgtg tccacccgcg     660
cgctagagtg cgccaagatg cagaacgcag aagctgccga cgccacgctg gtgttcatcg     720
gctacgtggt gccagcactg gccaccctct acgcgctggt gctactctcc cgcgtccgca     780
gggaggacac gcccctggac cgggacacgg gccggctgga gccctcggca cacaggctgc     840
tggtggccac cgtgtgcacg cagtttgggc tctggacgcc acactatctg atcctgctgg     900
ggcacacggt catcatctcg cgagggaagc ccgtggatgc acactacctg gggctactgc     960
actttgtgaa ggatttctcc aaactcctgg ccttctccag cagctttgtg acaccacttc    1020
tctaccgcta catgaaccag agcttcccca gcaagctcca acggctgatg aaaaagctgc    1080
cctgcgggga ccggcactgc tccccggacc acatggggggt gcagcaggtg ctggcgtagg    1140
cggcccagcc ctcctgggga cacgtgactc tggtggacgc agagcactta gttaccctgg    1200
acgctcccca catccttcca gaaggagacg agctgctgga agagaagcag gaggggtgtt    1260
tttcttgaag tttcctttttt cccacaaatg ccactcttgg gccaaggctg tggtccccgt    1320
ggctggcatc tggcttgagt ctccccgagg cctgtgcgtc tcccaaacac gcagctcaag    1380
gtccacatcc gcaaaagcct cctcgccttc agcctcctca gcattcagtt tgtcaatgaa    1440
gtgatgaaag cttagagcca gtatttatac tttgtggtta aaatacttga ttccccccttg    1500
tttgtttttac aaaaacagat gtttcctaga aaaatgacaa atagtaaaat gaacaaaacc    1560
ctacgaaaga atggcaacag ccagggtggc cgggccctgc cagtgggcgg cgtgtgctag    1620
caaggcctgc cgggtgtgcc gcagtcacca caggGttctg agaacatttc acagaagtgc    1680
ctgagacgcg gagacatggc tggtgttaaa tggagctatt caatagcagt gacgcgctct    1740
cctcagccac caaatgtccc tgacaccctc cccagccccc acagataaca tcagctgagg    1800
ttttttttcag tatgaacctg tcctaaatca attcctcaaa gtgtgcacaa aactaaagaa    1860
tataaataaa ccaaagaaag gtgaaaaaaa aaa                                  1893
```

```
        <210> 436
        <211> 1968
        <212> DNA
        <213> Homo sapiens




        <400> 436
ccttgcttgc aggaagccat gcagttagtt tctgcagtta gtcgtgtgag gctaggtggt      60
tgggcaggcc tcgggctgta ggtgttgggt gggaaaaaga cccaagggcc tgaaagggag     120
ggaaaggga gggtagcggg agggtagcag gtgagttcct agggctggaa ggtttaacag     180
cagcctggtg cagtgccctg tcatcaagac aaacccacgg tcctcctggg tgcctaccaa     240
gcttggtttg tacaaaagca aggtgggagt ctattttgt acatgagata catcacactt     300
acctgtgggc cagtattgtg aagtgagtct gagttgttta cactgatgcc ttccctgccc     360
accacaaatt gtgtacatag tcttcagatg ataccacccc tttccccagc tcccaaccaa     420
gagctggttc taggcctgtg ttatatgtca tatttagcgt ttttatatat gacctttgat     480
ttctgttgtt tgtattttag cacagtgtat gcaccttcat ttaaatacat ctgtgtgcat     540
acagatacgc atatatgtgt gtgcgtatgc atatatctct catctgtagt ttccaagagt     600
tcagctgaag cagatggagt cctgcagccc aggagacacc ctgcatccct gctaatagtg     660
tttgccacaa gtattagtga gtcttcctta ttaatatttt catttcagaa gactgaagca     720
aagctgatag tgtttgctgt ttctttggca gctaagtgag ggtcttggga tgacttgctg     780
tgttcctcaa gctgcacttt ggggccatct ctgcagtatt agcccccttt ttgcttggtg     840
gtactctgtc tgtgcctgtg tgtgtgtgtg atagtcactc ttgcatggct tccatgtctg     900
gtttgtggca tttgggata aggtgctgaa gccagagcat ttgcagtttg tttgaggcct     960
cgttgccaat gatagatcac tcctgttgac ctggtatgtc tgcttgcttg ctgctttttcc    1020
ttgctttctc ttggaagagg aaaggactct ggtcaggccc aggctgagtg agatgagctg    1080
cagctggctc atggccttct tagagcagag agaggagtat gtcattttac taagttccta    1140
aacaaacatt tatgcaggca cactccttg cagatccaga aactgaggca caatagggtt    1200
atgacttgct caagaatatg tagctgctag ggggtaaatc aaggcatcac aatttctgtt    1260
cagcgggcag gaataggctg tgaattgcta gcactttttt tttttaagca attacttttt    1320
gacttgttcc tctgaaaggg caagaggcgt acacctttcc caaatgtaaa ctaaaatctg    1380
caggatgcca cccactgtat agttctgctt tcccagagag gaagaacttt tagaaaccaa    1440
atgatcttaa ttgttattgc ccacccctgg ctttttccggg tagaaaattc acagtaggaa    1500
```

```
tgattgttaa gagagagtgc ttggaaccat gggttaacag gaaaggctac ctaacttcac   1560
atatctgcaa ccagagcagc caccaagcat tacttagcag caggaaaatg attgtatttg   1620
agttcctgtg tgtccaaaac tgaggcacca tgttctttga aaacatgcca cctcaaggct   1680
gggcgcggtg gctcacacct gtaatcccag cactttggga ggccgaggcg gcggatcac   1740
cggaggtcgg gagtttgaga ccagcctgac caacatggag aaaccccatc tctactaaaa   1800
atacaaaatt agccgggcgt ggtggcatgc gcctataatc tcagctactt gggaggctga   1860
ggcaggagaa ttgcttgaac ccaggaggcg gaggttgcgg tgagttgaga tcgtgccatt   1920
gcactccggc ctgggcaaca acagcaaaac tccgtctcaa aaaaaaaa ,               1968
```

```
        <210> 437
        <211> 422
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 437
tttttttttt ttgaggcaga gtctcactct gtcacccagg ctggagtgta gtggcgcaac    60
ctcagcctct ccaagtgctg ggattacagg catgagccac cactcccagc caatagtgaa   120
ttttctaaga gcatgtatcc ctatcagtaa gtaacaggga tacatgaaga tacttataaa   180
atacagaaaa actgcccagc aaatcagggc cctaaacagt tggtagattc cataaattca   240
actggctacc atgtatagcc ctcactgtaa ggtaggtggt taggtttcta gagagcatta   300
gtcttagaat tatgaagagc catattaacc caaatgattt ctaaatttag atatatattt   360
tccctgctac ataaaaactc tgggtaataa ctagaaatag acccacaatt tagagacaat   420
gt                                                                  422
```

```
        <210> 438
        <211> 1319
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 438
aggcagcacg cggaggagcg cggccgccgc aaccccaaga cggggttgac cctggagcgt    60
gtgggccctg aaagcagccc ttacctcctg cggcgccacc agcgccaggg ccaggagggc   120
gagcactacc acagctgcgt gcagctggcc ccgacgcgag gcctggagga gtctgccacg   180
gccccctgag cttgccggtg gccctcgggt gggcggggtg gcgccgcggc cactgaagca   240
ccgcgcatgg agtggaaagt gaaggtgcgc agcgacggaa cccgctacgt ggccaagcgg   300
cccgtgcgag atcggctgct gaaagcccgt gccctgaaga tccgggagga gcgcagcggt   360
atgacgaccg acgacgacgc ggtgagcgag atgaagatgg gccgctactg gagcaaggag   420
gagcggaagc agcacctgat ccgggcccgt gagcagcgga gcggcgcga gttcatgatg   480
cagagccggc tggagtgcct gcgggagcag cagaatggcg acagcaagcc cgagctcaac   540
atcattgccc tgagccaccg caaaaccatg aagaagcgga acaagaagat cctggacaac   600
tggatcacca tccaggagat gctggcccac ggcgcgcgct ccgccgatgg caagcgggtc   660
tacaaccctc ttctctcagt caccaccgtg tgagctgccc gggcgggtac acggcccagg   720
cccagggaac cccctggggc cccggccctc actctcctat agagattgtg tgtgtgtgtg   780
tgtgcgcgcg cgcgtgctcg ctgtgcgcac gcacacatct cgtctgggtg tgcgcacagg   840
gctttgttag cagagagaag cccctgagga gaagggacgc ttttcttcct tctgcccaag   900
taaagtgacc atgccagtgg ccagcactgg gggcacacct gtgatgggca ccccttcagc   960
tgtgcgtgtg cattccccat cccccatgct cttgcgtgtg cttgcacgtg cacgcacaca  1020
cacacccagt gctctctcca cccgacccgt gtacttgcag acagggaagc tgagctgaaa  1080
```

```
ggagcacaag agagtgtccg gcttcgctgc tgagcgcggc ctctccccgc cgctgcgcac    1140
tgcagttatt tgtagacaaa ggcacccctg atttttgtgg tttttctccc tttctgtgct    1200
tgccaatagt tgttttgttt tgtggacctg ccctgggggc tggcagctcc ttcaggcagc    1260
ctggcagaag tggaactccc ctctccactg atggctggga agggagttgg ggaggaaga     1319
```

```
<210> 439
<211> 1689
<212> DNA
<213> Homo sapiens
```

```
<400> 439
gagcgatcga ggctgcagcg cggccgccgg gcgcaacatg actgccgtcg gcgtgcaggc    60
ccagaggcct ttgggccaaa ggcagccccg ccggtccttc tttgaatcct tcatccggac    120
cctcatcatc acgtgtgtgg ccctggctgt ggtcctgtcc tcggtctcca tttgtgatgg    180
gcactggctc ctggctgagg accgcctctt cgggctctgg cacttctgca ccaccaccaa    240
ccagagtgtg ccgatctgct tcagagacct gggccaggcc catgtgcccg ggctggccgt    300
gggcatgggc ctggtacgca gcgtgggcgc cttggccgtg gtggccgcca tttttggcct    360
ggagttcctc atggtgtccc agttgtgcga ggacaaacac tcacagtgca agtgggtcat    420
gggttccatc ctcctcctgg tgtctttcgt cctctcctcc ggcgggctcc tgggttttgt    480
gatcctcctc aggaaccaag tcacactcat cggcttcacc ctaatgtttt ggtgcgaatt    540
cactgcctcc ttcctcctct tcctgaacgc catcagcggc cttcacatca acagcatcac    600
ccatccctgg gaatgaccgt ggaaatttta ggccccctcc agggacatca gattccacaa    660
gaaaatatgg tcaaaatggg acttttccag catgtggcct ctggtggggc tgggttggac    720
aagggccttg aaacggctgc ctgtttgccg ataacttgtg ggtggtcagc cagaaatggc    780
cggggggcct ctgcacctgg tctgcagggc cagaggccag gagggtgcct cagtgccacc    840
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gtaggtttcc aaaccatttg actcggtttg cctccctgcc cgttgtttaa accttacaaa    1260
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tgattaacac ccatgctggg gatgcatgga ggtgaagggg gccaggaacc agtggagatt    1620
tccatccttg ccagcacgtc tgtacttctg ttcattaaag tgctcccttt ctagtcctta    1680
aaaaaaaaa                                                           1689
```

```
<210> 440
<211> 1574
<212> DNA
<213> Homo sapiens
```

```
<400> 440
ccagatcctg cccaacctct atctgggcag tgcccgggat tccgccaatt tggagagcct    60
```

```
ggccaaactg ggcatccgct acatcctcaa tgtcacccccc·aacctcccaa acttcttcga      120
gaagaatggt gactttcact acaagcagat ccccatctcc gaccactgga gccagaacct      180
gtcgcggttc tttccggagg ccattgagtt cattgatgag gccttgtccc agaactgcgg      240
ggtgctcgtc cactgcttgg cgggggtcag ccgttctgtc accgtcactg tggcctacct      300
catgcagaag ctccacctct ctctcaacga tgcctatgac ctggtcaaga ggaagaagtc      360
taacatctcc cccaacttca acttcatggg gcagttgctg gactttgagc gcagcttgcg      420
gctggaggag cgccactcgc aggagcaggg cagtgggggg caggcatctg cggcctccaa      480
cccgccctcc ttcttcacca cccccaccag tgatggcgcc ttcgagctgg cccccaccta      540
gggccccgtg gccggcaggc cggcccctgc cccacccccca ccacgggtg tccctgccca      600
ctcgtgtggc aagggagggg agggcaggag ggctcggcct gagcagggtg ctggggggag      660
agcgcaatac ctcacgcggg ctgccgtcct aatcaacgtg cctatggcgg gaccacgctc      720
ggagcctgcc tcttctgcga ctgttacttt ttctttgcgg gatgggggtg ggggttccct    ·780
ctccaggtgg ttgtccaggc ccaggtcccg gccctgggtg ctcagccagc tcggctaggc      840
cctgcgcctc cctgcgcttc ccccttcagg aagggtgtgt gccacctcgt tgcactggat      900
cccagtggct gcttggggga gaggcgtttg ccatcactgg tgttgtcacc tccctgtttc      960
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ggtgggctgt tttgtttttt ttttttcctc ttcccccaaa tgtcttgacg ggatcactgg     ¹1140
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agccgctgct actttggggg gtgggggaag gggccaaagc tgaagacaca cacagtcatt     1320
catttctgtc caacacccct gtgggtggcg ggtgtgccgt gtgtgtgctt gtgtgtgcgc     1380
acgtgtcggc gctcacacac acatgctagc ccactgatgc acccagccca gggctggcag     1440
tctttgcagc gtggggccgt ctcaccctgg·agcctggaga ggatctatgc ttgtttgttt     1500
ttgtaatcca tatcatagtt gctttcttta attgttcctt ctgaataaac agtttatta     1560
agataaaaaa aaaa                                                       1574
```

```
<210> 441
<211> 1102
<212> DNA
<213> Homo sapiens
```

```
·<400> 441
tttttttta aaaaaaatt aagctcttta attatgtgca cacagatttt agaaaaggta       60
gccttttgta tatagatacc tttacattct ttaggctgac ttttaaattg tcatcttttt     120
tcaactacag tttttgtata tagtaaacca gaagatgtgt atggaccctg ttatggccaa     180·
gcatctcaaa gatgaagaga gaattaatga tagttatatt tcactcaaaa tgccaaaaaa     240
aaaaattcaa caaagtaaaa attttaaaac ttgactctaa ctagttcctt tttgttttac     300
attctcaaac cattgtcaaa tattctaaat atctctgaga atttctcttt taatgcttca     360
cttgtataat cttaaaatcc tgacagtcat acaatacagc atgtagtagg tacctttttct     420
tgaggcacat tcaagtgttt tggcaaacag taaaaagtat ctaaatgcca caggttaaaa     480
tgtcaagttt tactgagtca ccaacttcac ctcttttgat ctgcctgttc tccaagaaca     540
tcattctccg gaagatccaa gttcctctag ttgttttctt tgtgttgttt ccagttcttc     600
tagtcttttg cgaagtagag agagttccct ttgatgttgt tcctcctgca tatgaggagg     660
aaatggtagt tccatgcttg gaacccatgg ctgatgactg aaagctaaca ggattgatag·    720
atgctgttgg aggcatgtta ggaaccaaaa ttagacttcg aaattcatta tgtcttctct     780
gtatatcttt tagtctttttt tgaagccttg tatagtcttc aaaaggaaca ttttgtctat     840
ttaagacctg attttctgtt tccaattctt ctttctttgc ctccaagact tctactttct     900
cttgtagtct tttcaatttg ttttcatgaa gagattttct ctaaaaagag aaatatgaac     960
aagtatgtta atacataatc tcttatttga acaaaactat atagaaaata ttttactcac    1020
caaaaactgt gtttagatat gaatgttttc agtgaatact agaaacaaag gttagtagac    1080
atggctctta ctgaaaattg ca                                             1102
```

<210> 442
<211> 1049
<212> DNA
<213> Homo sapiens

<400> 442

```
ggaaggcctg gtgcaggagc ctctgagctc tttccttctg tgaccacgga cctgtcagtt      60
tccaaacaaa acgcgtgcct cacttgtgtg gattttgtca ctgtgcatgt atgtatgggt     120
ttctggggca ttggtcctgg tgctctctcc acatcctgca tcccgtaccc tctgtctcat     180
ggcccaggca gtgtgaaggc ggagatgctg cacatgtaca gccagaagga cccgctcatc     240
ctctgtgtgc gcctggccgt gctgctcgcg gtgaccctca ctgtgccagt cgtgctgttc     300
cctatccgcc gggccctgca gcagctgctt ttcccaggca aggccttcag ctggccacga     360
catgtggcca tagctctgat cctgcttgtt ttggtcaatg tccttgtcat ctgtgtgcca     420
accatccggg atatctttgg agttatcggg tccacctcag cccccagcct catcttcatc     480
ctccccagca tcttctacct ccgcattgta ccctctgagg tggagccttt cttatcctgg     540
cccaagatcc aggccctgtg ctttggagtc ctgggagtcc tcttcatggc cgtcagtcta     600
ggctttatgt ttgccaactg gccacaggc cagagccgca tgtctggaca ctgatcaggc     660
cctgctggcc caggtccctg tgcgcatgca catggagggg tcagggccgc tccctagggt     720
ccctcctgcc caacatgtgg aggtggctgg ttcccatgaa cgtggttgtc agaggcgggg     780
gacagcagag gctgcagact ggcccacttc cctcctcccc agggatgcca agcttggatc     840
atggccctaa tcccaacccc aaccccatgg gaggaggagg aggaggaaga agaggaggag     900
gaggaggagg aggaggagga ggaggaggag gccaggtcct ggtggagcct ttgcccagcc     960
cagtcctctc tgcctcctcc tggctgaagc tgtttgtcca ggattaccct cggggctaaa    1020
gaggaaaaat aaagatgttg agctaccaa                                      1049
```

<210> 443
<211> 458
<212> DNA
<213> Homo sapiens

<400> 443

```
gaattcatga cttaacgtca gttagtattg cttaatggaa tcgacataca tattgttata      60
ccgtgaatca ttttcagtca agaccacatt tctcagagtt tgccaaaaca aaccttctgc     120
cttcgggttg tcaggccact ggaggatgga gctcttacag atccgctgcc gtagcctcaa     180
atactgagaa tgctgtaaca ctggctccag caggataaat ataatcacat ccatgttctc     240
atccattagc ctctgcaaag ccaagtaaaa agctgtttta aagttccagc tttttgcata     300
tttttttggtt aaaacaaata ctgttttctt gctttggttg atgctctgca tgaggttgtc     360
gatgatggcc aatcccgggt cccaatccct ctcctctaga caaaggagaa cgttttttgtc     420
tcggctctct tcaaggtggt agcgcagctc atttatca                             458
```

<210> 444
<211> 1681
<212> DNA
<213> Homo sapiens

```
      <400> 444
tttttttttt ttgggctaga ggtttgggct ttaatggcag ctggggtaaa aggaaacaaa      60
aacagtaatt ctgaagagca cagggaacag gcagccagga ccagcctggc ccattccagg     120
ccagctgagc tgaaatgctg attctgtcca gggggctgct gtatgtgtag actggtggca     180
gtcttgggga ctgaggcctc ttggagagaa gggaagactg tcggctcaga agtccatgga     240
gctgtgggcc aggtagtcct tgcgaccgat gttgctgacc tgcttggtct gcatagcctc     300
gagtttgggg cagtcagtga tccgatgacc caggcccccg cagaaggcac agccgcgctc     360
tcctccaatg tccagcatgg actcatcccc gcaatgcagc acctgcagca cgggcggcac     420
cttctgcttg gcttctagca gcagcgcttt gaggtccatc agcactgact catcacacgc     480
tttgttgatg aaggtagtgg cgatgcctgt gtttcccgag cgcccggtgc ggccaatccg     540
gtgtacatag ttctcaatct cctctggcat gtcataattg atgacgtgct ggatggcagg     600
gaagtccagg cccttggagg caacgtctgt ggctactagg acatccttct tgccctcccg     660
gaatgcctcg atggccttag tccgttcctc ctggtctttg cccccatgga tggctacggc     720
ctcaaccccc ttgagcagca ggtactcgtg gatggcgtcc acgtctgcct tcttctctgc     780
aaagatgagt acaggcgggg gtgtcttctg caggcactcg agcaggtaca ccatcttggc     840
ctcctccttc acatattcta cctcctggat gacatccagg ctggcagccc cagcgcgccc     900
cacattgatg gtcacaggct ttacaagggc actcttagca aagttctgaa tcttcttcgg     960
catggtggca ctgaagagca gggtctgtcg ctggcccttg aagtaggaga agatggtacg    1020
gatgtcaccc tcgaagccca tgtcgatcat gcggtcagcc tcgtccaggg ccaggtagcg    1080
acagatgtct aggctgacca tcttcttctg cagcaaatcc atgaggcgcc ccggggtggc    1140
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aatgcagagg cgcagcgca ggagtggtga gctgtcctcc tgcagcaggc ggcagtagta    1260
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gggcccctcg cgctttgaga agggtaacct cttctcttgt tccaggcaga acatgatgac    1380
gggcaacgtg aacaccagtg tcttgcctga acccgtgaaa gcgatgccta tcatgtcacg    1440
gccagataga atggtgggga tgccctggat ctgaatgggt gttgggtggt gaatgccttt    1500
cttcttcagg cctctcagga tggctgcagg aaacttcatt tccttgaagc tcttgatggg    1560
tggtgggata ccgtctccct ccaccaggat gtggtatttc ttccgcacgc gctcatgtcg    1620
ctcttcagac atgctcagaa cataacgggg tggagtccag ctggttttga tggggtcatc    1680
a                                                                      1681
```

```
      <210> 445
      <211> 621
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 445
atcgagacca cccagcccag tgaggacacg aatgccaaca gtcaggacaa cagcatgcaa      60
cctgagacaa gcagccagca gcagctcctg agccccacgc tgtcggatcg aggaggaagt     120
cggcaagatg cagccgacgc agggaaaccc cagaggaaat ttgggcagtg cgtctgccc     180
tcagccccaa aaccaataag ccattcagtg tcctcagtca acttacggtt tggaggaagg     240
acaaccatga aatctgtcgt gtgcaaaatg aaccccatga ctgacgcggc ttcctgcggt     300
tctgaagtta agaagtggtg gacccggcag ctgactgtgg agagcgacga agtggggat     360
gaccttctgg atatttaggt ggatgtcaat gtagatgaat ttctagtggt ggaaaccgtt     420
ttctaataat gtccttgatt gtccagtgag caatctgtaa ttgatctata actgaattcc     480
agcttgtcac aagatgttta taaattgatt ttcatcctgc cacagaaagg cataagctgc     540
atgtatgatg ggttactatc aatcattgct caaaaaatt tttgtataat gacagtactg     600
ataatattag aaatgatacc g                                                621
```

```
      <210> 446
```

228

```
        <211> 468
        <212> DNA
        <213> Homo sapiens



        <400> 446
taacgatcgc ttctctgctt gctacttcac cttgaaactc aaggaagcag ctgttagaca      60
gcgtgaagcc ctaaagaagc ttaccaagaa tatagccact gactcatata tcagtgttaa     120
cttgagagat gtctatgccc ggagtatcat ggagatgctg cgactgaaag gcagagaaag     180
agcaagtact aggagcagcg ggggagatga tttctggttt tgaattaatt ttcaatttat     240
ttacaaaagc tatgtacaat taactaaaat gataaagcag tgatgtggat ttctgtattc     300
tgatgatgag tctcttcaga gtactgctca tcttaattaa ttttttgctga tatattgctt     360
catctactag aatatttcac atcacctata acaactgcac agtgttctga cacatttgag     420
tgtccaaaat agccaattaa cacaaccaaa tacaactggg catgtatt                  468



        <210> 447
        <211> 1030
        <212> DNA
        <213> Homo sapiens



        <400> 447
ctttactgtc ttcattctgg gaataactat tcgaccactg gtggagtttc ttgatgtcaa      60
gaggtccaat aagaaacaac aagctgtcag tgaagaaatc tattgtcggt tgtttgatca     120
tgtgaagact ggaattgaag atgtttgtgg acattggggt cacaactttt ggagagacaa     180
gtttaagaag tttgatgata aatatctgcg gaagcttttg attcgggaaa accaaccaaa     240
gtcaagtatt gtatctttat ataaaaagct tgaaataaaa catgccattg agatggcaga     300
gactgggatg ataagtactg tccctacatt tgcatctcta aatgattgtc gtgaagaaaa     360
aataaggaag gtcacgtcca gtgaaactga tgaaattcga gaactcttat caagaaatct     420
ctatcaaatc cgtcagcgaa ctttatccta caacagacac agtctgacag ccgacacaag     480
tgagagacaa gccaaggaga ttctgattcg ccggcgacac agtttgcgag aaagcattag     540
gaaggacagc agcttgaatc gagaacacag ggcttccact tcaacctccc gatatttatc     600
cttacctaaa aatacgaagc ttccagaaaa gctacaaaag aggaggacta tttctattgc     660
agatggcaat agcagcgact cagacgcaga tgccgggacc accgtgctca atttgcagcc     720
cagagccagg cgcttcttgc cagaacagtt ctccaagaaa tccccccagt cctataaaat     780
ggaatggaag aatgaggtag atgttgattc tggccgagat atgcccagca cccccccaac     840
accccacagc agagaaaagg gcacccagac gtcaggctta ctacagcagc cccttctctc     900
taaagaccag tctggctcag agagggaaga cagtttgact gaaggcatcc cgcccaagcc     960
gccaccacgg ctggtctgga gggcatcgga acctggaagc cggaaagccc gatttgggag    1020
tgagaagcct                                                          1030



        <210> 448
        <211> 1936
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 448
ggcacgagga ggcctcgggg ctgtccgtgt ggatggggaa gcagatggag cccttgcacg      60
cagtgccccc ggcagccatc accttgatct tgtccttgct cgttgccgtg ttcactgagt     120
gcacaagcaa cgtggccacc accaccttgt tcctgcccat ctttgcctcc atgtctcgct     180
ccatcggcct caatccgctg tacatcatgc tgccctgtac cctgagtgcc tcctttgcct     240
tcatgttgcc tgtggccacc cctccaaatg ccatcgtgtt cacctatggg cacctcaagg     300
ttgctgacat ggtgaaaaca ggagtcataa tgaacataat tggagtcttc tgtgtgtttt     360
tggctgtcaa cacctgggga cgggccatat ttgacttgga tcatttccct gactgggcta     420
atgtgacaca tattgagact taggaagagc cacaagacca cacacacagc ccttaccctc     480
ctcaggacta ccgaaccttc tggcacacct tgtacagagt tttggggttc acaccccaaa     540
atgacccaac gatgtccaca caccaccaaa acccagccaa tgggccacct cttcctccaa     600
gcccagatgc agagatggtc atgggcagct ggagggtagg ctcagaaatg aagggaaccc     660
ctcagtgggc tgctggaccc atctttccca agccttgcca ttatctctgt gagggaggcc     720
aggtagccga gggatcagga tgcaggctgc tgtacccgct ctgcctcaag catcccccac     780
acagggctct ggttttcact cgcttcgtcc tagatagttt aaatgggaat cagatcccct     840
ggttgagagc taagacaacc acctaccagt gcccatgtcc cttccagctc accttgagca     900
gcctcagatc atctctgtca ctctggaagg acaccccag ccagggacgg aatgcctggt     960
cttgagcaac ctcccactgc tggagtgcga gtgggaatca gagcctcctg aagcctctgg    1020
gaactcctcc tgtggccacc accaaaggat gaggaatctg agttgccaac ttcaggacga    1080
cacctggctt gccacccaca gtgcaccaca ggccaaccta cgcccttcat cacttggttc    1140
tgttttaatc gactggcccc ctgtcccacc tctccagtga gcctccttca actccttggt    1200
cccctgttgt ctgggtcaac atttgccgag acgccttggc tggcaccctc tggggtcccc    1260
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taggatcaca ctccaagtat gggcagtgat ggcgctctgg ggaccacagt gggctatcta    1380
ggtcctccct cacctgaggc ccagagtgga cacagctgtt aatttccact ggctatgcca    1440
cttcagagtc tttcatgcca gcgtttgagc tcctctgggt aaaatcttcc ctttgttgac    1500
tggccttcac agccatggct ggtgacaaca gaggatcgtt gagattgagc agcgcttggt    1560
gatctctcag caaacaaccc ctgcccgtgg gccaatctac ttgaagttac tcggacaaag    1620
accccaaagt ggggcaacaa ctccagagag ctgtgggaa tcttcagaac cccctgtaa     1680
gagacagaca tgagagacaa gcatcttctt tcccccgcaa gtccatttta tttccttctt    1740
gtgctgctct ggaagacagg cagtagcaaa gagatgagct cctggatggc attttccagg    1800
gcaggagaaa gtatgagagc ctcaggaaac cccatcaagg accgagtatg tgtctggttc    1860
cttgggtggg acgattcctg accacactgt ccagctcttg ctctcattaa atgctctgtc    1920
tcccgcggaa agctcc                                                    1936
```

```
        <210> 449
        <211> 354
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 449
ggcacgagct ggaaaacaat tggcttcaac atgagaaagc tcctacagaa gaaggaaaa      60
aagagctgct ggccctaagt aacgcgaacc cctcgctgct ggagcggcac tgtgcctacc     120
tctaagccaa gatcactgaa tgagcggacg actgaggaca tatgcttaa gctcgaccca     180
ttcccatagc gacgctcatc actctgcttg catgctcttc aaccctcagc tgtcggctct     240
cgagctaccc cctcaatgtc atgcggcctc cttcccatcc gcccttcctc gccgctgctc     300
agtactccgc gttaggagac cttcgtactt agcggcccgc tccagagtac cgcc           354
```

```
        <210> 450
        <211> 1073
        <212> DNA
        <213> Homo sapiens
```

```
       <400> 450
ggaaacatca tctacatgta catgcagcca ggagccaggt cttcccagga ccagggcaag      60
ttcctcacgc tcttctacaa cattgtcacc cccctcctca atcctctcat ctacaccctc     120
agaaacagag aggtgaaggg ggcactggga aggttgcttc tggggaagag agagctagga     180
aaggagtaaa ggcatctcca cctgacttca cctccatcca gggccactgg cagcatctgg     240
aacggctgaa ttccagctga tattagccca cgactcccaa cttgcctttt tctggacttt     300
tgtgaggctg tttcagttct gacattatgt gtttttgttg ttgctcttaa aattgagacg     360
gggtctcact ctgtcaccta gggtggagtg cagtggtgcc accatagctc cttcgactat     420
tgggcttaag cgatcctccc ccacctcagc cttccaagta actgggacta caggtgtgca     480
tcactggcag tgggaattgt ggcttttctg tcttctatgg agacggggtc ttgcctgtgt     540
tgccccaggc tggtcccaaa ccccctggcc tcatgtgatc ctcctgccat ggcctcctaa     600
agttctggga ttacaagtgt gagtcactgt gactggccaa cattatgtga tttatgtgtg     660
aacctatata acacaaatca tcccccaaaa ccccatcctg gatctgtaaa gcagctgcca     720
aagaatgaag tgagagaaac agttgtaaag atgagtttcc caccctactt atacccagag     780
tgcctaagag gaaatcaact cttcctcaat cagagctttg cctttgtttg ttgttgtttg     840
cctttaaagt ctaacacacc tgacatgttt cagtcagaat gaccccaaat gcatcactgt     900
tctccacgtg gtcccaagtg cctctctgtt tagggccatc aaatcatgga atgcagcaca     960
gtttgatatt ttctatattc ccaattccta cccaaacctt ttcatgaaat cgtagagttt    1020
gttttaccct ttatctggtg taagattctg cataaaccaa gaagtgaacc tgt           1073
```

```
       <210> 451
       <211> 2674
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 451
gcgcattgac ccctagaaca gcgctcgaat tgccgcgtcg acccacgcgt gcgaacccac      60
acaatggcca gcgataccag cagcctggtg cagtcccata cttacaagaa gcgagagccg     120
gccgacgtgc cctatcagac tgggcagctc caccccgcca tccgggtggc agacctcctt     180
cagcacatca cacagatgaa gtgtgcggag ggctacggct tcaaggagga atacgagagc     240
ttctttgaag ggcagtctgc accatgggac tcggctaaga aagatgagaa cagaatgaag     300
aacagatacg gaatatcat tgcatacgat cattcccgag tgaggctgca gacaatagaa     360
ggagacacaa actcagacta tatcaatggc aattatatcg atggttatca tcgacccaat     420
cattacattg ctacccaagg gccaatgcag gaaaccatct atgacttctg gaggatggtg     480
tggcacgaaa acactgcaag tatcatcatg gtgaccaatc ttgtggaagt gggaagggtc     540
aaatgctgca aatactggcc agatgacaca gagatatata aagacattaa agttacccta     600
atagaaacag aactactggc agaatatgtg ataagaacat ttgctgttga aaagagaggt     660
gtgcatgaaa tccgagagat cagacagttt cacttcactg ctggccgga tcatggggtc     720
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gtcattgata tcatgttgga catggccgaa agggaagggg tcgtagacat ctacaactgc     900
gtcagggagc tgcggtcacg gagggtgaac atggtgcaaa cagaggagca gtatgtgttt    960
atccacgatg cgatcctgga agcctgtctt tgtggggaca cctctgtgcc tgcttccaa    1020
gttaggtctc tgtattatga catgaacaaa ctggatccac agacaaactc aagccagatt    1080
aaagaggaat tccggacgct aaacatggtg acaccaacgc tgcgagtaga ggactgcagc    1140
atcgcactgt tgcccccggaa ccatgagaaa aaccggtgca tggacatcct gccccccagac    1200
cgctgcctgc ccttcctcat caccatcgat ggggagagca gcaactacat caatgctgcc    1260
ctcatggaca gctataaaca gccttcagct tttatagtca cccagcatcc tttgccaaac    1320
acagtgaaag acttttggag actggtcctg gattatcact gcacatccgt agttatgcta    1380
aatgatgtgg atcctgccca gttgtgtcca cagtactggc cagaaaacgg agtacacaga    1440
cacggcccca tccaggtgga atttgtctct gctgacctgg aagaggacat catcagcagg    1500
```

```
atattccgca tttacaatgc cgccagaccc caagatggat atcggatggt gcagcaattc      1560
cagttcctgg gctggccgat gtacagggac acaccagtgt ctaagcgctc cttcttgaag      1620
ctcattcgcc aggtggacaa gtggcaagag gaatacaatg gcggggaagg ccgcaccgtt      1680
gtgcactgct tgaacggggg aggccgcagt gggacgttct gcgccatcag catcgtatgt      1740
gagatgctcc ggcaccagag aaccgtggat gtctttcacg ctgtgaagac actgaggaac      1800
aacaagccca acatggtcga cctcctggat cagtacaagt tctgctacga ggtggccctg      1860
gaatacttga attctggctg atggtgtaaa cagctctgca aacaatccct ttcataccac      1920
aaagccaaga cgttccatgg tatttgtgca aaagagatga agacttctca atatgcttat      1980
tttgctttgc ataattggct cttttttaaga gcccaagaaa gtgtttctaa aattgcttgc      2040
actgcccaat cccagtaatg ctgctgcctg acagaaacac acacacagcc acagttgcca      2100
aatcccgtac tccttgccac cggcttccta gagcagcgta gacagctggt aaactgaaga      2160
gcacaactat attcttatga aggaatttgt acctttgggg tattattttg tggcccgtga      2220
ccctcgttat tgttacagct gagtgtatgt ttttgttctg tggagaatgc tatctggcat      2280
tatggtaata tattatttta ggtaatattt gtactttaac atgttgcata atatatgctt      2340
atgtagcttt ccaggactaa cagataaatg tgtaatgaac aaagatatgt tgtatgagtc      2400
gtcgtttctg tcagatttgt attgtttcca agggaaaagc ttgggggagg actcagttca      2460
caaaatgcaa aactcaacga tcagattcac ggacccagag cttttccatg tgtttatatt      2520
gtaaatattt ttgatttcat cgaaattatt tattcattaa aagaaatttt tgtgaagcac      2580
agtgagtgac aatcatttt cttaaggcct ggaaacgatt ttctgtatga tgttacttta      2640
tgtgaattct catctcaata aatgatgacc cgtg                                  2674
```

<210> 452
<211> 601
<212> DNA
<213> Homo sapiens

<400> 452
```
tttttttttt tttcagcggg aaaaatgtgg atttaatgga atgaaggatg aaagggcccg       60
aagccagcaa gtctcgcccc acctaccagc ccccacccag cttcccaagg gtctcagagg      120
gacactcttg gcactggcct ttcacatctg ttcaacaacc cctgagctga aaagttgcag      180
tgggaggcct ccagctcagc aggtggactc caaaataccc ctcttgtctt atccactcca      240
ggtcggggc agggaagcac atggggctgc ttctgccacg ttccctccac agccatcccc      300
aaggccaggc acacaggcac catccaaggg cctgccccct agcagtgaga ctctagctct      360
gtgagtctga gcagtgaggt cctgggggtg gcgggagccg agggtcctgc tgggttccgc      420
tggggcaggt cctcggctgg gcacatgagc tgacggattc tctctctgaa ggggcccttg      480
agggttccga gtctgtagag gctccaggca ggaatgcaga ccatggagga cagagccagg      540
agccagccca gggcatcgcc ccaccacggg tacgtgtact cttgttgta ggtcagcgga      600
g                                                                       601
```

<210> 453
<211> 474
<212> DNA
<213> Homo sapiens

<400> 453
```
cgacccacgc gtgcgggatc ctatcgaaaa ggattggtgc gactgggcca tgattagcag       60
gtaggggcag tgatggaggg tggctcaggc caggggtgg acctgctcat tgcaggtaga      120
ccctgagtga gagtggggca ctcttctccc tgggtccacc ccctctctca ctcaagtcct      180
```

232

```
cttctgcccc taggccttat agcaccctgc gagattgcct ggagcacttt gcagagttgt    240
ttgacctggg cttccccaat cccttggcag agaggatcat ctttgagact caccagatcc    300
actttgccaa ctgctccctg gggcagccca ccttctctga ccccccagag gatgtactcc    360
tggccatgat catagccccc atctgcctca tcccctttcct catcactctt gtagtatgga    420
ggagtaaaga cagtgaggcc caggcctaag gggccacgag cttctcacaa ccat          474
```

```
        <210> 454
        <211> 1838
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 454
tttttttttt ttatatttaa aaattaattt aatgcttggc taaatcttaa ttacatatat     60
aattatcaaa cgatagtcct taatttccaa aaaaattcct cttttgaaaa tccagaatca    120
gaaagcataa acttttaaac caagttcccc tgaatatttta caatgtggta taaacattat    180
agaagaccat ggatattaaa ttgcctgggg tgtggctaat cagcaaggcg tattctttat    240
tgcatattta actcacatat gtgggatttt aaatatgaca gactactaaa attcaaatgc    300
atgtatctgc aagctgggca gggagtaaaa tcatgaatga gacaggacgg tcagcccaaa    360
accatgcaat taggttgtgg gtttattatt ttcaaaagtg aaatttctat gttccatttg    420
aaactatgtt gcatattcat ttagcattca cattaaaccc acatttgact ctaacgctga    480
ttcaaggaag aaagttcaac attcactcaa tgactaagtc cacaactcaa ctctcaatgt    540
taaggcagca cagctacagt gatagcaacg ctaaccaaaa ggtaatgaac atttagtcac    600
ttgccagccc ttttgttaca acagtgtagt aatttcccta agacaatttg ctaccggata    660
attttctgct gttaaaaggc ttcctctgtg gaaaaacacc acaaatttcc agtgtgaaag    720
taagtccatg gtggtataaa tatatatatg cataattaca caatttacac tgcacacatc    780
gtttacaggg gacaattaac tgagagggtt aatttaaatg accatacaaa atacttcagt    840
aaacaaagta tgacaggcag taaagaaaac attcatagac tcctagaaat aatctgaatt    900
cctttcattc tgaagaaata tcatttaagg acacagtatt gaatataatg ttttttgtat    960
taaaacaaga attgctattt tacagtttaa gaaactttac atatatacaa aatttacaca   1020
ttgggaatgg taatcaagca aataggtttt tcagtctcat agatctattt tccttcgatc   1080
aaagacttaa attctttcac attgtggtca cttgcaacag acatagcatg atccaaagct   1140
cgaacacttg caaggagttt tactatctgt tttatgtttt cccttgcatt tcttttttcc   1200
acatcagaac acccgatact atttctataa attgtatccg ctaagtgtac aaggtatcgg   1260
caaaagtttt ctaactgaga aatagtcctt tctcctttca gattcatgaa ccattgtttg   1320
gggaaacaat tgattacatt ttgggctttt ttgatgctgt catctccata ttctgaattc   1380
tgaaagcca tgagaatata tcgatttaat aaaccatcta ttgataactc ttgcagagtt   1440
ttatttgaga aaatgccata ccactgaaga aaattgccta acagcttaac tgaagaccaa   1500
aactgtcgtt gaaaaaacaa gtaaggccca gaattttttat tttctaagac attttttggga   1560
tataagggca taaatacatc atcatctaaa gttcttctca ttctcaataa aagtgccttt   1620
aggtatacct gtgtattttt attttctgca ttcactactg aaggatatcc attgattaat   1680
tttagtgtaa ttcccaccat tcttgaagtc tgtgttgtag aaaaagggtc ccacatattt   1740
tcagctatca ctgttagttt aggaagaatc accttttcca caatggtagg tagtagggca   1800
acatctacat catctttttc ttgctctcgt tcttcaca                           1838
```

```
        <210> 455
        <211> 1790
        <212> DNA
        <213> Homo sapiens
```

233

```
      <400> 455
tgatccgatc ttgcactccg tcactgtggc tgactgcatt gtcacattca cttggcggag      60
gccaatttcc tacaggtgct ttcaggatca ggtcactgcg atggtctcta aacaccattc     120
tgctttctct gctctcttgt ctttaggagc cgggtgtggg ctgagccctg cctgattgat     180
gctgccaagg aggagtacaa cggggtgata gaagaatttt tggcaacagg agagaagctt     240
tttggacctt atgtttgggg aaggtatgac ttgctcttca tgccaccgtc ctttccattt     300
ggaggaatgg agaacccttg tctgaccttt gtcaccccct gcctgctagc tggggaccgc     360
tccttggcag atgtcatcat ccatgagatc tcccacagtt ggtttgggaa cctggtcacc     420
aacgccaact ggggtgaatt ctggctcaat gaaggtttca ccatgtacgc ccagaggagg     480
atctccacca tcctctttgg cgctgcgtac acctgcttgg aggctgcaac ggggcgggct     540
ctgctgcgtc aacacatgga catcactgga gaggaaaacc cactcaacaa gctccgcgtg     600
aagattgaac caggcgttga cccggacgac acctataatg agacccccta cgagaaaggt     660
ttctgctttg tctcatacct ggcccacttg gtgggtgatc aggatcagtt tgacagtttt     720
ctcaaggcct atgtgcatga attcaaattc cgaagcatct tagccgatga ctttctggac     780
ttctacttgg aatatttccc tgagcttaag aaaaagagag tggatatcat tccaggtttt     840
gagtttgatc gatggctgaa taccccccggc tggcccccgt acctccctga tctctcccct     900
ggggactcac tcatgaagcc tgctgaagag ctagcccaac tgtgggcagc cgaggagctg     960
gacatgaagg ccattgaagc cgtggccatc tctccctgga agacctacca gctggtctac    1020
ttcctggata agatcctcca gaaatcccct ctccctcctg ggaatgtgaa aaaacttgga    1080
gacacatacc caagtatctc aaatgcccgg aatgcagagc tccggctgcg atggggccaa    1140
atcgtcctta agaacgacca ccaggaagat ttctggaaag tgaaggagtt cctgcataac    1200
caggggaagc agaagtatac acttccgctg taccacgcaa tgatgggtgg cagtgaggtg    1260
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gtcaactatg tccagcagat cgtggcaccc aaggcagtt agaggctcgt gtgcatggcc    1380
cctgcctctt caggctctcc aggctttcag aataattgtt tgttcccaaa ttcctgttcc    1440
ctgatcaact tcctggagtt tatatcccct caggataatc tattctctag cttaggtatc    1500
tgtgactctt gggcctctgc tctggtggga acttacttct ctatagccca ctgagccccg    1560
agacagagaa cctgcccaca gctctccccg ctacaggctg caggcactgc agggcagcgg    1620
gtattctcct ccccacctaa gtctctggga agaagtggag aggactgatg ctcttctttt    1680
ttctctttct gtccttttttc ttgctgattt tatgcaaagg gctggcattc tgattgttct    1740
tttttcaggt ttaatcctta ttttaataaa gttttcaagc aaaaaaaaaa                1790
```

```
      <210> 456
      <211> 1293
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(1293)
      <223> n = a,t,c or g
```

```
      <400> 456
tgcgcaagcg ggagttccgg ctggagaccc gtgctctggg ccggcgcctt caccatggcc      60
tcggcagagc tggactacac catcgagatc ccggatcagc cctgctggag ccagaagaac     120
agccccagcc caggtgggga ggaggcagaa actcggcagc ctgtggtgat tctcttgggc     180
tggggtggct gcaaggacaa gaaccttgcc aagtacagtg ccatctacca caaaagggc     240
tgcatcgtaa tccgatacac agccccgtgg cacatggtct tcttctccga gtcactgggt     300
atcccttcac ttcgtgtttt ggcccagaag ctgctcgagc tgctctttga ttatgagatt     360
gagaaggagc ccctgctctt ccatgtcttc agcaacggtg gcgtcatgct gtaccgctac     420
gtgctggagc tcctgcagac ccgtcgcttc tgccgcctgc gtgtggtggg caccatcttt     480
gacagcgctc ctggtgacag caacctggta ggggctctgc gggccctggc agccatcctg     540
gagcgccggg ccgccatgct gcgcctgttg ctgctggtgg cctttgccct ggtggtcgtc     600
ctgttccacg tcctgcttgc tcccatcaca gccctcttcc acacccactt ctatgacagg     660
ctacaggacg cgggctctcg ctggcccgag ctctacctct actcgagggc tgacgaagta     720
```

```
gtcctggcca gagacataga acgcatggtg gaggcacgcc tggcacgccg ggtcctggcg      780
cgttctgtgg atttcgtgtc atctgcacac gtcagccacc tccgtgacta ccctacttac      840
tacacaagcc tctgtgtcga cttcatgcgc aaactgggtc cgctgctgaa ggccattgct      900
ccatctcacc tctgctccca gaaaataaat gccctgaaac cctccccca naacctgcaa       960
tctgtcgggc actcttctcg ttcaactccc tgtagccctt tgggactttg cggtccccta     1020
agtagaaaat tcctatgggc ctgtctcctg ggggcctctg tctgctggtg gtctgcttac     1080
cacagaatcc taaggggcag gagtgcctgg gcatgtgtct gtgggagcct tgcagtcagt     1140
tgtgtttgga caagtgcaac agtcaggctg ctgattcctg tggcatgcag gctgtagagg     1200
ttgacaaatg gagggggtg ttgagggtga gccctagttg attttttaaa atttaaactc      1260
tggtaagaac atttaatatg aaaaaaaaaa aaa                                   1293
```

```
        <210> 457
        <211> 1155
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 457
cccacgcgtc cgggacagac tcccatccac tggggtcagg gaccggaaag gcgacaaacc       60
ctggaaggag tcaggtggca gcgtggaggc ccccaggatg gggttcaccc acccgccggg      120
ccacctctct gggtgccaga gcagcctggc cagtggtgag acggggacag gctctgctga      180
cccgccaggg ggaccccgcc ccgggctgac ccgaagggcc ccggtaaaag acacacctgg      240
acgagccccc gctgctgacg cagctccagc aggcccctcc agctgcctgg gctgaggtgt      300
ctggtgcctg gaacagactt ccctgtggag gattcctgcc agaccctgcc cggctcctcc      360
ctgaccggtc cttgtgccct caccagacac cctgttggcc atgactcaac aaaccagtgt      420
tgggagccgt ctgcctcccc agctcagtgc ctttctgcac cccttctctc ctggggagct      480
gtctgcatcc gccacccct ccaaccactg ccctcagccc cgaccttat ttattaccct       540
ccctcccac accccaatc tacctggtga tgattttaag tttgcgcgtg tcttgggttg        600
ggctgggggg tttcccacat gcagtgtcag aggggccgcc cggtggggct atctccgttg      660
ctatattaat ggcaagacta aatgaaacct agggcacggc ctccgaagct gcgtgtggcc      720
ccttagaggt gagcatcaga gccagagcag tgaggggag actcacccac cctctccctc       780
tcccttcagc tctgggaggc aggcgcagtg ccccctccc gtgggctggc ccaggaccgc       840
gggtgaaacc tgggtctgtt tagtttcttt ggttttgta tgtttgtttg tttttgacac      900
agtctcgctt tgttgcccag gctggggtgc agtggcacga tcgcggctca ctgcaacctc      960
cacctcccgg gctcaagcga ttctctcacc tcagcctcct gagtaggtgg gattacagat     1020
gcccgccacc acacccagtt aattttgta tttttagaag agatggggtt tctccatgtt     1080
ggccaggctg gtcttgaact cctggtctca agtgatccgc ccgcctcggc ctcccaaagt     1140
gctgggatta caggg                                                      1155
```

```
        <210> 458
        <211> 1297
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 458
ggcaccaatc caatgtcagt atctgcaggc tgaagtacag acagttacac tgaaattgcg       60
tatgctctga ggaatgacac taaattcgct tccaggaaaa ttactcaatt ttgtaagtaa      120
ttttcagttt ttttctcag ggatatttt caactttcac tttaattttc tttagttgct       180
tagttgtaca ttttgagaag gcaaatccat tggaacttgg ggaggcttag aacataaatc      240
```

```
agtattagaa gtaaagggaa cacacagcta aaagtttttac tttaatcaca aattcacaac    300
tagagatatc atttgcatat cttagaacgc taaagacctg ttaaaatttt ttaaccaatc    360
agcaaaaata tgtgccccac agatttctaa tgttcataat ttagaattta tcacatataa    420
tatttattaa tagtttattt gcaaaattat tattcttaaa acacttcttt ccaacacatt    480
tacaatgttc atgtgtttta aagaaaaaaa ccaccctcat ttaaaaatgt actactgact    540
ttaatgtgtg gttataccag tgccaccaaa ttagaaaaga aaaagaaaca tacagctgta    600
ttggatatgt agttactact acaaataatg acaacacacg tcctatacaa agatcatatt    660
cacgctttc taccacttct cagtcattgt cagaaccatt tggaggtaag aaaaccaatg    720
catcattgaa aatatggccc aaatgcccta aggcggtata ccccatacat catcacatgc    780
atctgatttg gagtcagtcc attaaaagta acagccatat ctgaacaaca gccttctact    840
acctggttgg ggtgataagt cattgcctct ttaatagaaa gcccaacaga tttggtatta    900
aatacatctt ttccatcagc atcttctgca tttttctgcaa atactccagc atatttcagg    960
caaactgcta gctgtttatc ttcagatatc ttccaaatca tccctccctg ttcaggacac   1020
ttttctggga tattgagaag gctgttaagt cttttcattg attctacact taagacaatt   1080
cctccttcca tacccacata ttcaaggtct ccagatttta tagtgtggcc tagatagaaa   1140
ggctgtgatg gatcctttt taacaaaaaa tactttaggt tttcaatgat agcaaacgta   1200
gtggggcgtg caaggaagaa ccagttgtat tggtctctat acttacaaat acgcctttga   1260
taagtataga gaccaataca actggttctt ccttgca                            1297
```

<210> 459
<211> 777
<212> DNA
<213> Homo sapiens

<400> 459

```
tttttttttt ttctgaagaa gcatttatta gcatgcaggg cccatgctag aggctcctta     60
tttccagggc aaggccagcg agacagagcc cattgctcag gacgcagccc agattgcaaa    120
gagaggacag cccatggtag cggaagaaat tctggcggag agcactgtac ttggggtcct    180
tctctcgcag ctggcggtag ggatcgggac cctggtggct gcctggtacc tccccaccca    240
ggcctcgctc cttctccacg gtttgcaggg cccacatggc agctgtggtg cggggttcca    300
gccagcgggc gttgacagtg gccagcgtaa ggctcaggaa cagcaggtaa agctggctgg    360
cctcccagaa tgtgagctga gcccaagcat gctgtgaagc caagatgcag aggttgatga    420
aggcacagcc catggagatg tggaagtaga aggggaagag tttgctctgc actagtccga    480
aggtatgtcg gggaaggctt cggaaaagca ggaagcctga gacgaaggtc acccacattt    540
gcatgcccca ggcacctgac aagaccagta gatggaccat cttaatcagg cctcctaggt    600
tcccgccttc ctccatcttg cagtccgtta ggaaccggga cctcaatccg cagcacccgg    660
attccgagaa cagaggcgtc ggggccaaat gggctgaatc tggtacctca ctcccacgcc    720
cccgggtgga cagcgaccct cctcggccgc gtccctcgt gggtttcccc tcgtgcc       777
```

<210> 460
<211> 859
<212> DNA
<213> Homo sapiens

<400> 460

```
cctgtggaag aagagcagga tggagagcat ggtctggtcg atgttgcggt tgcagatgcc     60
ctcgttgatc aggtagcagg ggtcccgcag caccggctct agcgaatcct ccgcattat    120
gctgttgagc ttgtcggtat tgaggttctc aaagaccagc ttttcctgca gctgccgaaa    180
```

```
gttgctcact gtagggctgc ccgggttgtt gttctccccg ctgctgcctc gctggagccc    240
actccgatgg gccaggtcca ggcagcagtt gcagcagtcg aggccgacag gtgagcggca    300
atcgagcttg gactgggcca tcttctcagg ctcggaggtc gcctggcctg cgaggtcagg    360
ggcggctggc aggtgcgcgc ccaccgagct ggcctgaggg gactccaggg tgcctggaaa    420
agacaagctg tgaggaaaag agttggaaat tagcgcctaa agccagccac cttcggctcg    480
gcccccttct ggctgtactg ctccgggtgc gaatagaaac agctggacaa acagctccga    540
gcggatcctt cgggctcact tcctcctctt cctccttctc ctccccctcc tcttgaggcc    600
ggggggccgcc cccctgaggt gccacgcgcg gccccagcgc agtcccaagt ttcccaagtg    660
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agccagggcg cgcccttgct ccctccctcc tttgctccct ccctccccgg tttgcaggct    780
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gtgagctacg aaatcgtcg                                                   859
```

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acatttgcca ctattccagg aatggttggg cccgtcattg ctaaaagtct gaccccctgat    540
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acacaataca gaaggcactt tgaggttaca tgataaataa aaatacatta atagaggcag   1560
gattatttat tggttccttc agtgtctgtg tccatggtga tcattgagag cccagttttg   1620
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gcaatataga acacggtttg ccattctcca acagtgttat caggggtcag acttttagca   1740
atgacgggcc caaccattcc tggaatagtg gcaaatgtat ttgtgatgcc caggaggata   1800
ccagcatacg aaggagcaat atccagatgg ttgatgctaa atccagaaga gcaaaagcct   1860
cccagtgttg ttgatatagt taggaaagca acggccaaag aataatcaca gccaatgaag   1920
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```
```

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<210> 462
<211> 716
<212> DNA
<213> Homo sapiens


<400> 462
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cctggggtgg aggggggtga aggcacccag aaacctcggg actacatcat ccttgccatc   180
ctgtcctgct tctgccccat gtggcctgtc aacatcgtgg ccttcgctta tgctgtcatg   240
tcccggaaca gcctgcagca gggggacgtg gacggggccc agcgtctggg ccgggtagcc   300
aagctcttaa gcatcgtggc gctggtgggg ggagtcctca tcatcatcgc ctcctgcgtc   360
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ttgggagctg ccttgggccc attccctccc ctggggggag cccaactgat ggccctggcc   480
ccacccctaa ggaccaaggg agcctgagcg gccttgttta cagcttctgt cctgctcctg   540
catctttgcc agggtccttt tgccaactgt aagggccttg cctcattccc tggcaatggt   600
tccaacctcc ctgcactaat gcctgcatcc cctccggcct cttggccccc tatccctgca   660
cttctgggaa acctccctgg cactctggga aacctccctg gaacaacttc ccaaat       716




<210> 463
<211> 595
<212> DNA
<213> Homo sapiens




<400> 463
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acaaagactt caggtaaatt atagtacttc catgttagct gtgcatgtcc accacgcttt   180
gtctgtaact cgagtagaaa aagatgttgt gttttaatta atcattcctt acaattcaag   240
atgaactcca catatttaag aattcttggc tgaaagaaaa gtcttcaaga tactggatgc   300
ctctcaccac tttgacaata aacacacaag aaaaccattg tgtaaggcac tcaaaaggtt   360
cttatcaatc acgagagatc agtcacactg acattcattc ccatgccagg actcacgtaa   420
gggacagcat gcactgcttt gggaaattct ggagtcataa cacgtccatt ttctccagta   480
cttcctgtaa ttgacagcct tgccttgttc ctcatggcat cattcaaggt catcttaaat   540
gagagaggag ggaaagaaag aaaaagagat catacgttat ggttttcaaa tgcat        595




<210> 464
<211> 2017
<212> DNA
<213> Homo sapiens




<400> 464
tttttttttt ttcctttta aaactttatt taaatggaga ctcttagtca aatgattgga    60
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238

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aactgcactg gccctgtcag gggacacggc accctcgtgg gaccaggctc agccctcggg      180
gtggcacgag gtcctgcagg ctgcaggacc ctcacactcc agccccgtct ggtgacccaa      240
cccgggcccg tggtgcatgc tggggaaggc cactggccgg ccctgggct tcggctcctg       300
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ggcaccagga ccgacgcaga gctggggtcc tgtccctaag cctgtggcac agcgactctt      420
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ggcctcacac tgctccaggt agaagagcag cagctgccgg tccgagggcc ccaggccgcc      900
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ggtggcgctc acaccctgct gcagccgtgc cagggcctcc acagcaactt ccagctccag     1740
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gccggtgctg gaggccgaca ggcgcttgcc ctctgccggg gcttacgtt cagctggggg      1860
aggcaccgca tacacaccac tgtcgaccac gccaccatca gccacctcag gaggaagcac     1920
ccgttcacgg ggcacatcgt acagggtgcc cgggccaggc cgccgcaagc caggggggcac    1980
gtcgtagagg tcaggagccg ggggcggcac gtcatcc                              2017
```

```
<210> 465
<211> 1575
<212> DNA
<213> Homo sapiens
```

```
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ccccactctg tcttgttact tccggtagcg aagcctctcc ctcttcctct gctcccgcgg      180
ggtctgtgct gagaataatg gcccggttgg cccgggacga gtggaatgat taatgatgtt      240
ttgcagcagt tttctacgtc tgaaattttt tatgtctctg gaacccagaa tttgctaaga      300
gatggaggaa cctcagaaaa gctatgtgaa cacaatggac cttgagagag atgaacctct      360
caaaagcacc ggccctcaga tttctgttag tgaattttct tgccactgct gctacgacat      420
cctggttaac cccaccacct tgaactgtgg gcacagcttc tgccgtcact gccttgcttt      480
atggtgggca tcttcaaaga aaacagaatg tccagaatgc agagaaaaat gggaaggttt      540
ccccaaagtc agtattctcc tcaggatgc cattgaaaag ttatttcctg atgccattag      600
actgagattt gaagacattc agcagaataa tgacatagtc caaagtcttg cagcctttca      660
gaaatatggg aatgatcaga ttcctttagc tcctaacaca ggccgagcga atcagcagat      720
gggagggggga ttcttttccg gtgtgctcac agctttaact ggagtggcag tggtcctgct     780
cgtctatcac tggagcagca gggaatctga acacgacctc ctggtccaca aggctgtggc      840
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ttacagggaa aggttttat ctgaacgagt aaatggaagg ttgctttaa cctttgacaga       960
```

```
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catggagcta gaacgtgtca aagcattagg cgtgaagccc ccccagaatc tctgggaata   1080
taaggctgtg aacccaggca ggtccctgtt cctgctatac gccctcaaga gctcccccag   1140
gctgagtctg ctctacctgt acctgtttga ctacaccgac accttcctac ctttcatcca   1200
caccatctgc cctctgcaag aagacagctc tggggaggac atcgtcacca agcttctgga   1260
tcttaaggag cctacgtgga agcagtggag agagttcctg gtcaaatact ccttccttcc   1320
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gtttctcatc atcaatgcta tgttactctc agttctggaa ttattctcct tttggagaat   1440
ctggtcgaga agtgaactga agtaagtatg ttttaatggt tgtcacaaca ggggatggga   1500
aagaaatacc aagtgagaga aagatcctct tttatttctc acacttgaaa taaatcctcc   1560
atccacccag aaaaa                                                    1575
```

```
        <210>  466
        <211>  493
        <212>  DNA
        <213>  Homo sapiens
```

```
        <400>  466
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tcttgattct cgagttagag aggtgatcaa tagaaatctg ttggatccca atcctcacat    120
gtatgaagat gcccaacttc agatatatac tttaatgcac agagattctt ttccaaggtt    180
tttgaactct caaatttata agtcatttgt tgaaagtact gctggctctt cttctgaatc    240
ttaatgttca tttaaaaaca atcattttgg agggctgaga tgggaaataa aagtagttaa    300
ataacatcag aaactgagtt cctggagaac tacagtttag cattcctcag gctactgtga    360
aaacacaacc gttatggtct ttgtctccat ttttatcaag gttttccatg gttaagtttg    420
gagaaaatac cacacaaaac aatgaattgc caaattgttt gttttattca agactcaatc    480
tactttgcaa gcg                                                       493
```

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        <210>  467
        <211>  1572
        <212>  DNA
        <213>  Homo sapiens
```

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        <400>  467
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aatggagggc aaaggagatg tgatgtccac tgcctgtgga actccaggct atgtcgctcc    120
tgaagtcctc gcccagaaac cttacagcaa agccgttgac tgctggtcca tcggagtgat    180
tgcctacatc ttgctctgcg gctaccctcc tttttatgat gaaaatgact ccaagctctt    240
tgagcagatc ctcaaggcgg aatatgagtt tgactctccc tactgggatg acatctccga    300
ctctgcaaaa gacttcattc ggaacctgat ggagaaggac ccgaataaaa gatacacgtg    360
tgagcaggca gctcggcacc catggatcgc tggtgacaca gccctcaaca aaaacatcca    420
cgagtccgtc agcgcccaga tccggaaaaa ctttgccaag agcaaatgga gacaagcatt    480
taatgccacg gccgtcgtca gacatatgag aaaactacac ctcggcagca gcctggacag    540
ttcaaatgca agtgtttcga gcagcctcag tttggccagc caaaaagact gtgcgtctgg    600
caccttccac gctctgtagt ttcatttctt cttcgtcggg ggtctcagga gttggagccg    660
agcggagacc caggcccacc actgtgacgg cagtgcactc tggaagcaag tgactggccc    720
tggaggtggg gcccggggtc ggggctgggg aaggggagcc ccagggtcgc cagagccgcg    780
agccactcca gcgagacccc accttgcatg gtgccccttc ctgcatagga ctggaagacc    840
```

```
gaagtttttt tatggccata ttttctactg caattctgaa gtgttcattt ctcacaaact   900
gtactgactc gaggggcgct gatttcatag gatctggtgc tgtatatacg aatcttgcaa   960
agctctaact gaacggacct tcttattcct ctcccctaac accatcgttt ccactcttct  1020
cagtgtaggt aaccgtctat ggtgtgtttt ttcattaatg acaaaaaaaa aagggtttca  1080
actggattat ttaaatattg gtaaatattg tgcattaggg tttgtttttc cttttaagaa  1140
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gaggccaagt cgggcggatc acaaggtcag gagatcaagg ccatcctggt tctatactgt  1380
gtagattgct ggctactaaa aatacaaaaa attagccggg cgtggtggca cacacctagt  1440
agtcccggct actcgggtag gctgaggcag gagaattgct tgaacccggg agacggaggt  1500
tgcagtgagc tgagatcgtg ccactgcact ccagcctggg,tgacagagca agactctgtc  1560
tcaaaaaaaa aa                                                       1572
```

<210> 468
<211> 1927
<212> DNA
<213> Homo sapiens

<400> 468
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cgggggacag tacaagaaaa actcaattgg gcatttaatc tgtatgacat aaataaagat   120
ggctacatca ctaaagagga aatgcttgat ataatgaaag caatatacga tatgatgggt   180
aaatgtacat atcctgtcct caaagaagat gctcccagac aacacgttga aacatttttt   240
cagaaaatgg acaaaaataa agatgggggtt gttaccatag atgagttcat tgaaagctgc   300
caaaaagatg aaaacataat gcgctccatg cagctctttg aaaatgtgat ttaacttgtc   360
aaatagatcc tgaatccaac agacaaatgt gaactattct accacccttta aagttggagc   420
taccactttt agcatagatt gctcagcttg acactgaagc atattatgca aacaagcttt   480
gttttaatat aaagcaatcc ccaaaagatt tgagctttca gttataaatt tgcatccttt   540
tcataatgcc actgagttca ggggatggtc taactcattt catactctgt gaatattcaa   600
aagtaataga atctggcata tagtttttatt ggttccttag ccatgggatt attgaggctt   660
tcacatatca gtgattttaa aatatcagtg ttttttgcta ctcatttgta tgtattcagt   720
cctaggattt tgaatggttt tctaatatag tgacatctgc atttaatttc cagaaattaa   780
attaatttttc atgtttgaat gctgtaattc catttaaatt ccatttatat actttaagga   840
aacaagatta caacaattaa aaaaacacat agttccagtt tctatggcct tcccaccttc   900
tgttagaaat tagttttatc tggcattttt aaacatttaa aaattattaa acatttaaaa   960
attagtttat tatcagatat cagcatatgc ctaataaaac ttattttaat aagcatttaa  1020
ttttccataa tatgttacag ccaaggccta tataataatt ttggatttgt tcaatctttc  1080
ttacaggctg ttttctattg tatcaatcat tagtatcaat cattaagtgg aagttgaaga  1140
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ccagtatata gtaatgctta ataacaagta atcctaacag cattaaaggc caaatctgtc  1260
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gaaagaaacc ttgactaccc cactgtctac taagaacaaa cagcaagcaa aattagcaag  1380
caaaattcac tttgaaagca ccagtggttc cattacattg acaactacta ccaagattta  1440
gtagaaaata agtgctcaac aactaatcca gattacagta tgatttagct catcataatt  1500
cagattattt ttaatcatct tagccaaaac tgtaaagttg ccacattact aaagccacac  1560
acatcgtccc tgttttgtag aaatatcaca aagaccaaga ggctacagaa ggaggaaatt  1620
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taaaagcaaa ataaaatgtt aaaaaaaaaa aaagggggcg gccgttttaa aggatccagt  1860
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cgggccg                                                            1927
```

<210> 469
<211> 1013
<212> DNA
<213> Homo sapiens

<400> 469
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cccctaggag ccctgaacac catacgccag cttggcacga ggggagaagt ctcggtccta      60
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aaggggaaga aacctttgaa aactggctga cccaagtcaa tggcgtcctg ccagattgga     180
atatgtctga ggaggaaaag ctcaagcgct tgatgaaaac ccttaggggc cctgcccgcg     240
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tccagaacgc tattcaggca ggcattatag ctgagaaaga tgcaaaccgg actcgcttgc     480
agcagctcct tttaggcggt gagctgagta gggacctccg actcagactt aaggattttc     540
tcaggatgta tgcaaatgag caggagcggc ttcccaactt tctggagtta atcaaaatgg     600
taagggagga agaggattgg gatgatgctt ttattaaacg gaagcgtcca aaaaggtctg     660
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tcggcagtgc tgactgcaat gtgatagaga tagatgatac cctcgacgac tccgatgagg     780
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gagacagggc cagacctcag gatgaagtgc tggtcattga ttcccccac aattccaggg     900
ctcagtttcc ttccaccagt ggtggttctg gctataagaa taacggtcct ggggagatgc     960
gtagagccag gaagcgaaaa cacacaatcc gctgttcgta ttgtggtgag gag          1013
```


<210> 470
<211> 1543
<212> DNA
<213> Homo sapiens

<400> 470
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aaatgttctc acaattcaat aattaattac aaagactgag acttacatta aaaaagtaaa     120
aaccagaacc ccccaggtgc ccatccagca gaaggcccag gagggcagtg gggtggcagg     180
gctaggcggt gctgggccac tcagtgccga cttgggggaag tgcacgtcct gaacagcctt     240
gccaagcagc cgaccggtgg gaggacaggg gaagcctggc ccaagctgtg gacaagctgt     300
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ggggccagtg tgcaggagtg tgttgggtgg gtctacgtga tcatacgggc tactaatcac     480
ggggctccc atgcggggc aggactggtg ggggggggg cgggccaggg cggggcgggg     540
tggggtatcc cagtggctgc ttcgtgggcg ccctggggct ctgacttccc tcagcccagc     600
aggccacagg ggctgcctgc accacgacac tcgctggttt tatggcagga ggcagaagcc     660
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<212> DNA
<213> Homo sapiens
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<211> 5202
<212> DNA
<213> Homo sapiens
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244

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<212> DNA
<213> Homo sapiens

<400> 473
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<211> 1374
<212> DNA
<213> Homo sapiens

<400> 474

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246

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      <211> 3076
      <212> DNA
      <213> Homo sapiens
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<211> 959
<212> DNA
<213> Homo sapiens

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<210> 477
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<212> DNA
<213> Homo sapiens

248

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                                        249

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<211> 2477
<212> DNA
<213> Homo sapiens

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<222> (1)...(2477)
<223> n = a,t,c or g
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      <211> 1297
      <212> DNA
      <213> Homo sapiens




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ccagttcaag cgattctcat gcctcgacct cccgagtagc tgggaattac aggtgcccgc    1260
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      <210> 480
      <211> 569
      <212> DNA
      <213> Homo sapiens




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tcttcagcct cccaagatgc taggactaca ggtgcatgtc aacatgccca gctaattggt     180
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gtttcattaa tttcctctat tcttttttcca ttctccattt tatttatgtc cactctaatc    480
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<210> 481
<211> 1570
<212> DNA
<213> Homo sapiens

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aggacagagg gtagctgccg tcgccgtcgg cagtcaagca gttctgcaaa ttctctcagcag   180
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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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        <211> 1148
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        <213> Homo sapiens
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        <211> 1256
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<212> DNA
<213> Homo sapiens

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<211> 2547
<212> DNA
<213> Homo sapiens

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<210> 487
<211> 1228
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(1228)
<223> n = a,t,c or g


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256

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<211> 1410
<212> DNA
<213> Homo sapiens

<220> .
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<222> (1)...(1410)
<223> n = a,t,c or g
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gcttcttata tccgtgtncc agggctgaac tccttatttt cctttctcca naggcagagc  1380
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```

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<211> 1050
<212> DNA
<213> Homo sapiens
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aagacgctca aggactttgt gactgtcttg gccaagctgt tccctggacg gccgccagtc   180
aagaagctgt tggagatgct gcaggagtgg ctggccagcc ttcccctgga caggatcccc   240
tacaacgccg tgcttgacct ggtcaacaac aagatgcgga tttctggaat attccttact   300
```

```
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<210> 490
<211> 4797
<212> DNA
<213> Homo sapiens

<400> 490
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<211> 2480
<212> DNA
<213> Homo sapiens

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catacattca agtatgcggg ggggcgctac gtcctggaga ccctgtgttc gggcacctgt   180
ccctgctctc gggtgcggcc ctgcccctcc agaagcaggt cacctcacca ggcccagatc   240
tgcctctcca tcctagcctg agagtggggc ctagaggcac cctcctagat ggaactgcca   300
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```

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<211> 738
<212> DNA
<213> Homo sapiens
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caacagcagt gtgggctgca gggctccgtc tgcacgtgga cttgccctgg accttgagtg   600
tggccctccc tttctgggcc tccccaggtg aggcctggcc ctgccccacc atgacctggg   660
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260

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        <210> 494
        <211> 1179
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1179)
        <223> n = a,t,c or g

        <400> 494
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gagcaccagg gatggagcca cacataaggg acaaatgagt gcacggtcct acctagtctt   1020
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        <211> 900
        <212> DNA
        <213> Homo sapiens
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        <211> 4235
        <212> DNA
        <213> Homo sapiens
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<213> Homo sapiens
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<211> 421
<212> DNA
<213> Homo sapiens

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<211> 572
<212> DNA
<213> Homo sapiens

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<211> 1642
<212> DNA
<213> Homo sapiens



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<211> 2629
<212> DNA
<213> Homo sapiens



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<211> 997
<212> DNA
<213> Homo sapiens

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<211> 1586
<212> DNA
<213> Homo sapiens

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<211> 1442
<212> DNA
<213> Homo sapiens

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<210> 505
<211> 1284
<212> DNA
<213> Homo sapiens

<400> 505

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<211> 1757
<212> DNA
<213> Homo sapiens
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```

```
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<211> 618
<212> DNA
<213> Homo sapiens
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gtcatcaagc tggaagagga gttacgagag aagcaagcat atgttgagaa agttgagaag     180
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gagaaggagg agcggatcct ggccctggag ccgacatgga caaagtggga gcagaagtac     420
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agggacacca cgatcatcaa ccactcacgg aatggcagct acggagagag ctcgctggag     540
```

```
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```

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        <210> 508
        <211> 2214
        <212> DNA
        <213> Homo sapiens
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ccccactccg gagtcgccgc tgccgcgggg acatggtcct ctgcgttcag gggtgagcac        180
ccccttgtaa gctcagggct actgttgggt gtcagggaac aaagttttag actgctgcgc        240
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```

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        <212> DNA
        <213> Homo sapiens
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caggggaaga gatggctgtg aatattctct tggactgacc ccgacaggca tattaatctt   180
tgaaggagct aacaaaatag gcttattctt ttggcctaaa attaccaaaa tggatttaa    240
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aacaaatcca gaagtccata attaccagcc tcaatatcat cctaatatcc atcccagcca   660
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       <211> 775
       <212> DNA
       <213> Homo sapiens


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aagaaacgat gagatggttt ttgtttgtgg taccaatgca ttcaatccca tgtgtagata   180
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```
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```


```
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<211>  1553
<212>  DNA
<213>  Homo sapiens
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<211>  1260
<212>  DNA
<213>  Homo sapiens
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        <212> DNA
        <213> Homo sapiens
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<210> 514
<211> 963
<212> DNA
<213> Homo sapiens


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ggccgccggc ccactccatc cccgagtggg actggaccac ggccctggct gctgccactg    180
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cag                                                                   963



<210> 515
<211> 777
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(777)
<223> n = a,t,c or g



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tggagctgcc ggcccccaag tacatgaatg tgcagatgat acacagattg tgcacccagc    180
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274

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          <212> DNA
          <213> Homo sapiens




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          tttacagtag agatctgcat ctgacccctc tatcccatac ctttgcaaag gaagggaggg     180
          gtctacaagc cagaactttc agaagagaag aaaatacatg ctgtgctggt gctgtttctg     240
          gagcaggtca tcctttaggt atagaacacc acctccaccc gatgacatca gaaccactga     300
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          acagtagatc atgaaataca ttagtcctag tgaatgaccc ccgtgcagag aaatggcttg     540
          tggttgtcag ggagcagcca cttgcctcag gggctccctg accctcagtg aaaggtgact     600
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          cagcgccact cactcctcta ggcaggtgtg ccaaggtggt agaatggcac ccctgctctg    2820
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<210> 517
<211> 1731
<212> DNA
<213> Homo sapiens

<400> 517
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<210> 518
<211> 1327
<212> DNA
<213> Homo sapiens

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caccctccca gtaggatcac tgtcctcgga caaagagctc actcgtccca atgaaaccac     360
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    <210> 519
    <211> 1002
    <212> DNA
    <213> Homo sapiens


    <400> 519
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    <210> 520
    <211> 2966
    <212> DNA
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<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2966)
<223> n = a,t,c or g
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      <211> 1041
      <212> DNA
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<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

<220>

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<210> 526
<211> 6655
<212> DNA
<213> Homo sapiens

<400> 526

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```

```
<210> 527
<211> 1081
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1081)
<223> n = a,t,c or g
```

```
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gttggccctg catcctcctc ctggtggcgt gtgatggctt tgattctgct gatcctgtgc    180
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caatatgtgg taaaacaatc agaactaaag ggcactttca aaggtcataa atgcagcccc    360
tgtgacacaa actggagata ttatggagat agctgctatg ggttcttcag gcacaactta    420
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aaccggaaca ttgtggagta catcaaagcc agggactcat ttaattcgtt gggtcggatt    540
atctcgccag aagtcgaatg aggtctggaa gtgggaggat ggctcggtta tctcagaaaa    600
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```

```
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        <211> 1098
        <212> DNA
        <213> Homo sapiens




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        actgtggatg tacttgggaa tctctcgtcg gctgtcctca atgctcacgt tcttagcata    180
        ccttcaccct agagaaaggc ccccacatcg ggcgccagat gaaggggtgg cctgcccctc    240
        cacacctgtg ggtatttcta gtcaggtggg atgagagact gagaaaagaa agaagacaca    300
        gagacaaagt atagagaaac aacagtgggc ccaggggacc ggcactcagc acaccaagga    360
        cctgcaccgg caccggcctc tgagttccct cagtttttat tgactattat tttcattatt    420
        tcagcaaaaa ggaatgtagt aggacagcag ggtgataata aggagaaggt caacaaaaaa    480
        aacatgtgag caaaagaatc tatatcataa ttaagttcaa gggaaggtac tatgcctgga    540
        cgtgcacgta ggccagattt atgtttctct ccacccaaac atctcagtgg agtaaagaat    600
        aacaaggcag cactactgcc aacatgtctc gcctcccgcc acagggcagc ttttctccca    660
        tctcagagtt gaacaaatgt acgatcgggt tttacaccga gacattcagt tcccaggggc    720
        aagcaggaga cagtggcctt cctccatctc aactgcaaga ggctttcctc ttttactaat    780
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        agaatggtga tgactttttac caagtatact gcttgcaaat attttgttaa caaggcacgt   1020
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        aggttgggtc aaagtggt                                                 1098




        <210> 529
        <211> 1998
        <212> DNA
        <213> Homo sapiens




        <400> 529
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        acaattacaa gtttgaaatc tcactaggtg ttcatatact tttacaaatt catacaactg    180
        tatagtctac ttaagcttag tgttaaccaa aagagcaata tcaaagacct agacacttga    240
        ctactacttt tgcagtgggt atagttttat aacaacagaa taactgttac cttatgaata    300
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        tgcatgaagg ctcttaggag agcaaacacc tgttcctatt ctgtatgtcc ctccctcatt    420
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        ctcttttttt ccaaagcttt cttttgaatg ttcagatcct attaatccta actatagact    600
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        ggacagcgct taatccatac caaagtcttt ggaacactgc agatttgctt tagaggtaga    780
        taaaacagaa atcatgcagt taagtcaatt gagaaaaaaa aagggatttg ttgtctttac    840
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285

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agaacatcat gactaaaagt tgatcctttg ctcttggtgc acatttaaga ttttttacctg      900
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agatcgcttg ggtcggcgcc agtcgccacc acatcctcgg cagccatgat ctctggagta     1920
aaggttgggc cgcgctaggc agggatccgg aactcgccac tttctcctcc ctctgagcga     1980
gcgagtggcg cgcggggt                                                   1998
```

```
    <210> 530
    <211> 766
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 530
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tgccactgtg tttgccagct ctcccaagtg aaaagaacac ttttttataaa aaaattaatt      180
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caggtaagag gtgatcttgt ggataaattc atcatacttc actttgccat tgggttcgat      300
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ttaatttggt cttgggaaag aaacttggcc attctgggc ctcagctgct acccgtgggc      720
ttgctgctcc cagaaccgcg ttcagttccc tttcctccct cgtgcc                    766
```

```
    <210> 531
    <211> 1891
    <212> DNA
    <213> Homo sapiens
```

```
    <400> 531
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```

```
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gaataaaagc aacctcagaa caaaaaaaaa a                                     1891
```

```
        <210> 532
        <211> 1381
        <212> DNA
        <213> Homo sapiens



        <400> 532
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        atttccccctt ctgtattcat cccaccaaac accaaacaga gcagtgtagc agtctggctt    180
        tcctcatgtg agtcaccact gtggctcatt actttgtcag ctgaatcctc tttctcagct    240
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        atgggaatga taccacatgg gaatgggtcc caatcgtccc aggggggtag gaaggagtat    360
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        ctccgtggat gaagagcttt gtccctgctg ccaccatcac atgaccatgc cggggagatg    660
        gaggatttcc aagtgtctct ggctgtgacc aggtcagagt gtttgcgtca aacacatgca    720
        gcttcgtgtc ctgcacgggc tgggcacctc tctccgcc cccaaagaca tatagctggt    780
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        attggttggc acctccaaat acccagatac ggtcaggtgt gcaggaggga atgaagctag    960
        catgttcata ccggggcaag aggcccttgc aggtatctaa gtcccactgg tgttttccca   1020
        gatccatggt gtgcacgtct gagaagcttc tgtttggatt tgctccccca acaatgaaga   1080
```

287

```
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t                                                                     1381
```

```
<210> 533
<211> 1986
<212> DNA
<213> Homo sapiens
```

```
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```

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<210> 534
<211> 1891
<212> DNA
<213> Homo sapiens
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        <211> 1874
        <212> DNA
        <213> Homo sapiens
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ctacaaaaaa aaaa                                                     1874
```

```
                    <210> 536
                    <211> 704
                    <212> DNA
                    <213> Homo sapiens
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acgagaatca cttgaaccca ggaggcagag gttgcagtga ccgagattg cgccactgca    660
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```

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                    <211> 1058
                    <212> DNA
                    <213> Homo sapiens
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<210> 538
<211> 1895
<212> DNA
<213> Homo sapiens

<400> 538
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291

<210> 539
<211> 2730
<212> DNA
<213> Homo sapiens

<400> 539
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<210> 540
<211> 3707
<212> DNA
<213> Homo sapiens

<400> 540
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        <211> 620
        <212> DNA
        <213> Homo sapiens
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gcacagcctg catgggccac caactcttca atcacaactt gtagcaatcc tggccagggg    480
caaaactacg gcagagccag aggccacccc tgaccacttt ggccacactg gtcacttgct    540
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```

```
        <210> 542
        <211> 2475
        <212> DNA
        <213> Homo sapiens
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        <221> misc_feature
        <222> (1)...(2475)
        <223> n = a,t,c or g
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gaaccgagtg gtgctagcca aacagctgtt gttgagcgaa ttgttagaac atcttctgga    180
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<210> 543
<211> 862
<212> DNA
<213> Homo sapiens

<400> 543
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atattgctaa agaaaattct aataagagtt atctataatt atagctttta tttattatat    180
cttcattcaa tcatttatat cacaattagt ctaattgcat tcttgatgaa taactgactt    240
cagcaaagga gtcaatccac taagcaaagt tcatatatat ttttcaagat gttcttcttt    300
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295

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        <210> 544
        <211> 5656
        <212> DNA
        <213> Homo sapiens


        <400> 544
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        tggggacgct ccaaccatgg cccgtgccca ggcgctcgtg ttggaactca ccttccagct     180
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        cctagatgac atcctgcttc tcagctaccc ctgcgcaaag gccccacact tctcccgcct     720
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<210> 545
<211> 2735
<212> DNA
<213> Homo sapiens

<400> 545
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atacagttga aaaaattcaa tgatgtctct cctgcaggag aaattcacag catccccagg        180
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297

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```

```
<210> 546
<211> 4146
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(4146)
<223> n = a,t,c or g


<400> 546
gagacatggc ccgggcagtg gctcctggaa gaggaacaag tgtgggaaaa gggagaggaa      60
```

```
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ggatccaggc attgcctcgc tgctttcttt tctccaagac gggctgagga ttgtacagct    180
ctaggcggag ttggggctct tcggatcgct tagattctcc tctttgctgc atttcccccc    240
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gaacacggct ggccactggg tatactgctg acaaccgcaa caacaaaaac acaaatcctt   3780
ggcactggct agtctatgtc ctctcaagtg ccttttgtt tgtactggtt cattgtgtta    3840
cattaacgac ccactctgct tcttgctggt gaaagccctg ctctttaatc aaactctggt   3900
```

```
ggcccactga ctaagaagaa agtttatttt cgtgtgagat gccagcccct ccgggcaggc   3960
aagggctctg aagatttggg caacgtgggc ttaaattgtt ctgctttttc tgtagttcaa   4020
tttcatgttt cttgnaccct ttttgtataa agctgcaata ttctctctta ttgttcnttt   4080
catatggaat gtaatttctc gtgccgaatt cctgcaggcn aatcaattaa aatccccccg   4140
gcgccc                                                               4146
```

```
        <210> 547
        <211> 1348
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 547
ggcacgaggg cagtgccctc acctgggcca gccactacca ggagagactg aactccgaac     60
agagctgcct caatgagtgg acggctatgg ccgacctgga gtctctgcgg cctcccagcg    120
ccgagcctgg cgggtcagtg tgtggagggg agggactggg tggaggggaa ggcaggataa    180
tgcagtgggg ggcatggtgg agagggaggg gggcccttg actgaggggc tctgctccca     240
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tggggctccc cctccagcag taccgtgact tcatcgacaa ccagatgctg ctgctggtgg    420
cacagcggga ccgagcctcc cgcatcttcc cccacctcta cctgggctca gagtggaacg    480
cagcaaacct ggaggagctg cagaggaaca ggtagggcta tgagcccctc gggccaccca    540
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tgtgggctcc caggtgggga caggagacct gctggccagc ccccgcccac tctcctcccc    720
catccacact gtgaaacaag gacagaaaca aagggcctca gccacgccaa gacgagaagc    780
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tcagggaaga aggaactgcc cttctccccg tggggacctg gctgcctgct ctgacaggta   1080
cctgtcatct gcccaccatg ggcttctggg acctgctgta gccctgcca cccactgctg    1140
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ctgaagggct ggagttgcag ttggcccagc tgtctggacc agatggggaa acaagcccag   1260
cagggcaaga tgattggtct aaggtcgcag ccaggtgaca gctgggtcac ttctcctccc   1320
actgtcactg ctgcctccat ctgacttg                                      1348
```

```
        <210> 548
        <211> 1864
        <212> DNA
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(1864)
        <223> n = a,t,c or g
```

```
        <400> 548
tttttttttt tttaaaacaa tgtggtactg gtgtattgac agtaatgtcc acgaaacaga    60
```

```
atgaaaaccc ccaaaattaca ttaggttttac actgggagtt agcaaaacaa aagggcagca    120
ttaaccgaca tacagcacgt gggaggatgg tggaaaagct ggacatgact cactggacat    180
ttcaactgaa accacagagg ttcttgaaaa tgctggagaa ttccctgatt gccttatcag    240
ttacaaaccc aaattcagaa tcatgtgaca gctggataca ttcaactgta cgtacaaata    300
atgatcaaaa aacacaaaag ttgggtagtg gttaccatag cttttactgt agttattcat    360
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aataagcaaa aagataaact ggaaaataag acttacatct catatatatg gacaaaggac    480
caattacctc caaacataaa cagctcctag aaattactgc aaagatcaac aacccagtag    540
aaaaatgaat gaagttccca gaacagaaaa cacaagtggc ccttcaaaaa aatgaagaga    600
ggctcagcct cttatggtaa gacaaagaga caggattttta aaaacctagg cctcttccta    660
gagttccctt aaatatctag gccagatcat ttttacttcc tggcttagac cctgccaagg    720
gctgcccagc tactcaggtg tttgtgtcct tgtggactca agtcatattg tcctgatctt    780
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gagagccagc cctcctccac ccgggcgttc aacaccgttc gtttcccctc cagctcctcc   1680
aggtccccaa gcagctgcag gaccagcgaa tccagctccg ctcgcaggtc aagcgccgcc   1740
atggacacac ctccagatct ggagccacct tcttccttgt caccctccgc agtttggcag   1800
gacanccaat aggcacacga gatcctccat caaggggcgt tcccagtctg gggatcccca   1860
nggc                                                                 1864
```

```
<210> 549
<211> 649
<212> DNA
<213> Homo sapiens
```

```
<400> 549
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accgtggtca cccgcaggga cacggagggg ccaggcagag cagccctagt tcacctcacc    120
gggagccccc gccagaaggt gggcacctct gggagggagg gactgccagg ccttggggct    180
tcctgtgctg agtcagagct ggaacgggag acgcaggagc cccgcagccg cgggaggtgc    240
atatttgggg ctgccaggtg cgccaggtc cccttggcca gcccccagcg ccccttctt     300
ctgtccccag ggcctcggct tcacaggatg gggctgccag tgtcctgggc ccctcctgcc    360
ctctgggttc tagggtgctg cgccctgctc ctctcgctgt gggcgctgtg cacagcctgc    420
cgcaggcccg aggacgctgt agcccccagg aagagggcgc ggaggcagcg ggcgaggctg    480
cagggcagtg cgacggcggc ggaagcggtg agtgccaagc tgtcccgggg accagggtgg    540
ggtccgcagg ggaccgacca gccttcctcg cccccagtcc ctactgaagc ggacccacct    600
ctgctccctc agcaagtcgg acaccagact gcacgagctg caccagggc               649
```

```
<210> 550
<211> 696
```

<212> DNA
<213> Homo sapiens

<400> 550
```
tttttttttt ttaaaggttt gcatgtttat ttataattac aatttacatt actccaacag    60
aggagccccc ttgctatgtt ctaattctta gccattaagt cctacaaaaa taaacccaag   120
cttttacagt aacttaatca atacagaact aaagcccttta tagctattag aggggtttag   180
ttaccaaggt gcttattttc gacaaaatgc cctgtcactc agaggacgca tgcgtatact   240
aaagttctga cccatcgact catgcaacaa atgtagaccc caccctccct ccacccactg   300
ttacaacaca aacacaaaac aacgatgtac aacagagggg aaatatgctc ttggtcaact   360
gaccttgcag aaaagactgg cttgtttcca agtggatgag aacgccagtg tgtggccaga   420
gtccagcaat gactgaccgg cccaggtcag aggctggcag ggaccacaga agggccaagg   480
cgctgccggg gctcatccca ggctccaacc ccaacctgga agcttgtgga caccaggctc   540
tgtgcagcag ctccgtggct agcgtccagg gcccctggcc actactccca aatgcttcta   600
gtccacccac ccctggccag ccccaacctt gacatcactg tggatgccat cagggtggtc   660
tggttcactt atacaacatg atccatgggc tcgtgc                             696
```


<210> 551
<211> 1037
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1037)
<223> n = a,t,c or g

<400> 551
```
taaaaagtga ggatcttttc ctttcttgta agttagaaga aataacctct tcagttaaac    60
cttcagtgaa ggttctttta gttttctgtt ctgctttcta aaaacataga ctctgttctt   120
tagagcaact tatgactctc atctctgctg cacgagaata tgagatagag ttcatctatg   180
cgatctcacc tggattggat atcactttt ctaaccccaa ggaagtatcc acattgaaac   240
gtaaattgga ccaggtttct cagtttgggt gcagatcatt tgctttgctt tttgatgata   300
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tctccatcac aaatgaaatc tatcagtacc taggagagcc agaaactttc ctcttctgtc   420
ccacaggtat tgtatataat ggctttacat ttaactagtc ttcttggaat atataactta   480
taaaggacca tgggccccat tctctctcca cttccctcct cctttggtgt gtaaaagtag   540
gaatctttt ttagaagaca tttttcaaga tcctaaattg gagaaatttt aggaactaat   600
aaatgacaac tgactaggca aaagattttt atgtattttt aagtactgga agtatatgaa   660
cattacattg tcaatattaa aagagggata gtattgaaat gaaaactgga gaaaaaccaa   720
attacattgc ttttacctta gtcacttctc atttcctcct acttgtcccc ttttttctgcc   780
catgcatatc tgtcccttt tgcactcctc ccactcccat ctgggctctt atttcaagta   840
gtcagcatag aaagcttaac agttttttccc gtttttccttt ctttntgccc ctctggtttc   900
tttcattgaa aatattttag tctcttagtt gcttctcaaa attcaactta caggaagttt   960
tccccacact tcctttgtca ggaagaattt tagattaaat tatttaactt tctttgtgtg  1020
tatgtgagcc gagaacc                                                 1037
```


<210> 552
```

<211> 813
<212> DNA
<213> Homo sapiens

<400> 552
```
gccagtgggg cagcaaaggc cccttggggt aacaaaggtg ggatgtggaa ggccagggga      60
gcccggggggc gagagtgggg gcagatggag gctcgggaag atcagtattg aggaccatgt     120
aggggggagg gggccgggaa gggacctggc tggggaatga gaaaacctgg ggccatcgtc      180
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cccagaccag ctcggctacc tggtactgag tgaaggtgca gtgctggcgt catctgggga      360
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tttccggctg caccgcggca tgaatgtgcc cttcaagcgc ctgtctgtgg tctttggaga      480
acacacactg ctggtgacgg tgtcaggaca gagggtgttt gtggtgaaga ggcagaaccg      540
aggtcgggag cccattgatg tctgagcctg ccggagggcg agggtcggag aagcggattg      600
ggtcctgggc ctctgtgatg aggcaggcac acctgtcggt cttggcttgc tgctagaact      660
agggccttct gctcgcccac ctcccacccc tacctggacg ggcccaggct tggggactct      720
gagctgtgtt aaggagaaca agggcaagga gacctccctt tgtgctccct cactccctaa      780
taaacatgag tctgatgttc tccaaaaaaa aaa                                   813
```

<210> 553
<211> 1451
<212> DNA
<213> Homo sapiens

<400> 553
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gctttaaaga tgtggaagat ggggtacaat taaaaccatg agagttgtgc agggaacagc      120
cgtagggcct gtttgcacct tcagatattg cctgctccca aaaattcaga cccccagatg      180
cagggcaaga caataagaaa gggtgagtgc aagcaaggag agcctcctgc taagaggctg      240
aggtcccctc tggttccaag gatgggatgt cagccttgac cttccggggt ctgcagtggc      300
cagaggctgc ctgtcgcccc ttcctcctcc ccttcttggg cactgtggga gcttctgggt      360
cctgctggag gctggtcccc tcaggccgct gggttgcagt cctcttagga aggtctctct      420
ttgcccttcg tgtcctggaa ggggccttgc ttggaggcaa agcgtcctcc actctgtcct      480
caggactcag ctgtgtggcc ttggatttct ttttgcggga cttgcgccct gcaggacact      540
ggtgttggag ttggagggtc ctatcctgcc caggggtgac tcccagggtt gcagggggat      600
agggtggaga agggtgctgt agcccttgca ggcgtgaagt cctttctgct ctcttagcct      660
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tggggataat tcaggaatca gcctgggttg gcacaggggc ggtattcctt ggagaggcag      780
gactcacaca cacccatcca gatcagtgta gcttctccct taggaagcct ctaggacatc      840
ccccatgtta gagtccacat cagcaaagct gctctgccct tggctacttt cacttgggct      900
acctgccttg ggctacttcc actagctgca actctgggac gcatgggtgg ggagggatgt      960
gaccctcagg aacagtgtgg tccttggagg gtctagacag accctgagca tcaccacccc     1020
agttattgtg accccacgtt tccacccatc agcctcctgg ggtctctgcc tgtgtgaaca     1080
gtagggccca acctggaacc agatggtacg gccatgccgg tcctgcaggg agctcatgcc     1140
tggcatgcca tagcagcgca gccaggctcg aaaggcagca aagtcctcct ccccgctctc     1200
tgacccgtag cctttgcccc ctgtgggaca gaggaacagg cagagatcag agggcaggct     1260
caggttggga ggagtgggga gcctggttag acctggccca gacctcagct acacaagctg     1320
atggactgag tcaggggcca cactctccct cctctggtga tgtgacctca gctggtttct     1380
tcccactcgg ccatgggttt cccatcctgg agtgggatta agaatccttg tcctggccct     1440
gtgcagtggc c                                                          1451
```

```
      <210> 554
      <211> 1663
      <212> DNA
      <213> Homo sapiens



         <400> 554
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   gggcagcaat taacctggag accccatgcc tatggcagtc tcaagaacgg aactagagat     120
   gctatgtttg aaaatcgacg catgattaaa gcgatacttc tggaagcatg cagggcaggc     180
   ggcccggcca tgacgcacag actctgtaca gccctgcaga cctcagccac catgctaaca     240
   ggcggacact tttaccatgc aatcaagggc acgggatcag ctgctttggg aagacttatt     300
   tccacccct ccagtctctc aggctggagc gcagtggcgt gatctcaact cactgcaacc      360
   tctgcctcct aggttcaagc gattcttctg cctcagcctc ctgagtatgt gagactacag     420
   gcacgcacca ccacgcccag ctaatgtttg tattttagc agagatggag tttcaccata      480
   ttggccaggc tggtctcgaa ctcccgatct cgtgatctgc ctgcctgggc ctcccaaaga     540
   gctgggatta caggcgtgag ccactgcgcc cagccaggaa gactttcttc atggcaaaca     600
   gtgggttctt tcagggggaca tttctgtaat gtacaaaaga acctgcaaaa acaaaagcac     660
   ctaggggagac agaagactgg gaaaggccca tgaagggcag agctctctca gtaatggagg     720
   aaactaatag gactgctgct aatggagccc caggtgagcc ctgggattgc aaggccaccg     780
   ctggcacagg caaccatgct tgtgtggagg tgcaggcgtg agcccttctg caagggggct     840
   ctctgccagc acccatgcag ggctcagaag ggggcctggc tgtggatctt gctgggttcc     900
   agcagcacag aggcccactg gcctctgacg caacatacgc ctggggaagt gtgcaggccc     960
   agcggagaca gaactgccaa gagtctggac tcacggtagt cttcagactc gtccaggatc    1020
   tcggacctga tgatctcctc gatcacgtcc tccagggtga ccaggcccag gacctcgtag    1080
   aaggggtcgc cttcaccctc gttgttcacc ttctgcacga tggccaggtg ggacttccct    1140
   gtggggggag gacactcatg gaacagcttg ctgggccccc cccagtttga ttcatctccc    1200
   ctggtatagg cccaccaaaa ggacacggct aacgttcatg ctcctacaac gtgccaggca    1260
   cagagccaca ctcttttcta ggttttttact taagactccc agcgtgatta tgagaactgg    1320
   ccttatttttc acacaggttg aaaatgaagc agtgggctca tgcccatctg cacaaggccc    1380
   cccaggcaga gctggcagag ctgggatcca gctccaggtc cgtgcacctc catgacatgg    1440
   atgcagttta gacaaggatg cctccctcca gtggagaaca caaatgcctc acacatcagc    1500
   cagcctgcac atgcaggcta acaagggcac tgactctgga aacacaggct ctcctgcgac    1560
   agtccacacg gggcagctga gtggggccac ccagcctgac tgtccttggg aggatttcct    1620
   aagtcttttt cttcttaaag taaatatata tgctgtccat cct                      1663



      <210> 555
      <211> 1040
      <212> DNA
      <213> Homo sapiens



         <400> 555
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   ctgtccgtga cgtggattgg tgctgcaccc ctcatcctgt ctcggattgt gggaggctgg     120
   gagtgcgaga agcattccca accctggcag gtgcttgtgg cctctcgtgg cagggcagtc     180
   tgcggcggtg ttctggtgca cccccagtgg gtcctcacag ctgcccactg catcaggaag     240
   tgagtagggg cctggggtct ggggagcagg tgtctgtgtc ccagaggaat aacagctggg     300
   catttttcccc aggataacct ctaaggccag ccttgggact gggggagaga gggaaagttc     360
   tggttcaggt cacatgggga ggcagggttg gggctggacc accctcccca tggctgcctg     420
```

```
ggtctccatc tgtgtccctc tatgtctctt tgtgtcgctt tcattatgtc tcttggtaac    480
tggcttcggt tgtgtctctc cgtgtgacta ttttgttctc tctctccctc tcttctctgt    540
cttcagtctc catatctccc cctctctctg tccttctctg gtccctctct agccagtgtg    600
tctcaccctg tatctctctg ccaggctctg tctctcggtc tctgtctcac ctgtgccttc    660
tccctactga acacacgcac gggatggggc tggggggacc ctgagaaaag gaagggcttt    720
ggctgggcgc ggtggctcac acctgtaatc ccagcacttt gggaggccaa ggcaggtaga    780
tcacctgagg tcaggagttc gagaccagcc tggctaacat ggtgaaaccc cgtctctact    840
aaaaatacaa aaaaaaagta gccaggcatg gtggcgcatg cctgtagtcc cagttactca    900
ggagactagg gcaggagaat tgcttgaacc tgggaggcaa aggttgcagt gagccgagat    960
ccgtgccact gcactccagc ctgggtgaca gagtgagact ccgcctcaaa aaagaaaaaa   1020
aaaaagtct cgacggtcga                                                1040
```

```
<210> 556
<211> 1331
<212> DNA
<213> Homo sapiens
```

```
<400> 556
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acataaacta tttgctgata tttactgagt gcttgcaatg tatcagagtc attaaataag    180
atgcaacttc tactgtgaaa actggaatct tcattaggac acagacttag aaaaggccca    240
gtttcaagga ttctgacttg cacagactga gcactcccat ttccagaagt tcgaatacct    300
cctttcttat ctcgggaatg tccatcattc tcctcaactt ctgatctctc cagttccagt    360
caaaaaccag aaattttaag gggctcaaat taaggccacc ttgtttaaca agttctttaa    420
ttctccccgg agttcctaca cccaggtgca ccacacgctt ctccagcaac tttacctgcg    480
cctggacctt tatgtgcttt gcaaataatt ttataacttt gccgtctcct ctgaatgctg    540
tcatcgacct aatgagctcc agggctcgga cggccgagct gcagatgatc agcatcagga    600
ccgatttctt ctcactgtgg ttcttcctaa gttttaccca cttaggacaa atttcttta    660
ggtatgagga aagactgtga gtcaaatcat tggccttgag gaaacaggag tctggcaggt    720
tcagttcttc taattcaatc accaagcgtc tgctgctata atagtccttc atcagcttct    780
gtaggtcttc aggtaaccct ggttttggtt ctgattttgc aagaacatca gtaattttct    840
tctttcttct tttcctggtc ttggtggtat tctcttttct ttcctttggt tgtatcaaaa    900
aacattcttt aggctgtttg gttttctctg aaggtacagg aactggaact gtctcctgct    960
gcatcacttc tgtgtctcct tctccttcac catctgatgc ttctgggctg ctgcctgctc   1020
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cgacgtgggc agaacatcac gggtaggcga ccagctgcgg agaatcacgt tgtctcaaag   1140
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ggcgatgacg tcacacctct gccccgcctc tccggcagcc gctcccagac tcgtcgcagt   1260
ttccacacag gcgccgacag gcagaagcag tttggaaacg caacataaat ccccccaaag   1320
atttatactt g                                                        1331
```

```
<210> 557
<211> 971
<212> DNA
<213> Homo sapiens
```

```
<400> 557
```

```
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aagagctttg gagaccagcc catggggaca gagtcagagg cactgggtgt aaaaaagagc     120
gagcgtgtgg cacatttggt ccattgtcat gtgcgggtat ggcaggagga gggggtaatc     180
tagaagcccc acatctaggg ccttctaggg acccagatat gcccccttag gcaaggctca     240
catgccaaag caaagcagat gaggtcagcc tggcttgggt tgagggctca gtgcctctta     300
gccttgccct ggggttcttg gaccttccgg aaactgagcc acatcaggct cacgttgata     360
gcataggtgg tgatacaaac aatgcagaaa tcatagagca cgaagaacag gatccaggcc     420
aggtagacag aaccagcgag agacaccagg gagctcagca gcatcaggac agaggcccag     480
cgtgtccgca ggcaacctaa caatagctgt agtgtgtaga agatgcaacc gaatatgctg     540
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ccccacctgg aggagaagac gcgcgaacag ctgatggcgg tgcccacgtc gcagagcgcg     660
cggtaatccc ggtcccgggc gcgcgccgcc ttcacgtgca gcgcgtagag cgagagcact     720
aagcccgtca ggcaaagagc gagccgcacc cagccagggc tcccccaggt gctgcccatt     780
atctccaggt tccgcccgag gcgcccgcgg agaaaaccag ccacggagca ggggccgggc     840
ggcgaatggc cgcgcccctc ctggccctct gactcggcga ttggccggcc gtgctcgcac     900
tccacgaccc aaatggctgt tccagggcgc tagtcaagcg ggcgagttag gaaaacagcg     960
aagaatgccg g                                                         971
```

```
<400> 558
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gccgctgctg ctgctgctgc tgttggcgtc gccgcccgcc gcctccgcgc cgtccgcccg     120
cgatcccttc gcccccagc tcggggacac gcagaactgc cagctgcggt gccgcgaccg     180
cgacctcggc ccgcagccct cgcaggcggg gctggagggc gcctccgagt ctccctatga     240
cagagccgtt ctgatcagcg cttgcgagcg tggctgccgc ctcttctcca tctgccgatt     300
tgtggccaga agctccaagc ccaatgccac ccaaactgag tgtgaagcag cctgcgtgga     360
agcctatgtg aaggaggcag agcagcaggc ctgtagccac ggctgctgga gccagcccgc     420
ggagcctgag ccggagcaga agagaaaggt cctggaggct ccaagtgggg ccctctccct     480
cttggacttg ttttccaccc tctgcaatga ccttgtcaac tcagcccagg gatttgtctc     540
ctccacctgg acatactact tgcagactga caatgggaaa gtggtggtgt ttcagactca     600
gcccatagtg gagagcctcg gcttccaggg gggccgtctg cagcgcgtgg aggtgacctg     660
gcgaggctcc caccctgaag ccctggaggt gcacgtggac cctgtaggcc ccctggacaa     720
ggtgaggaag gccaagatcc gagtcaagac cagcagcaag gccaaggtgg agtctgaaga     780
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cctggcctgc tgcctcttcc tctccgtgct ggtgatgctg tggctgagct gctccaccct     900
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cttcatgatg gagcccgatt ggccctgta cccgccgccg tcccacgcct gtgaggacag    1020
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cactgccaac tgcaggggc ccctcgggcc tcacttgccc tgagcccagg gagtccaagg    1140
gcagggtggg tccagccttg agccctcca ccccaaatc cttcctctcc tccagaccc     1200
accccttgcc ccacggagtc ctggggacgc agtgccccag ctgggaagag ggcgggatcg    1260
ggcactggtt cctccttgtc cccgctttct tgggggcttg ctactttttg tcttctattg    1320
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ttctccccat cccggtctcc agagacccag cttctgagag acagggtgtg ggcatctcca    1500
tgcccctata aagcgtgcct ggggcttgtc tggggctggg gaggaataaa ccatgtatat    1560
aaaagaaaaa aaaaa                                                    1575
```

```
        <210> 559
        <211> 820
        <212> DNA
        <213> Homo sapiens




         <400> 559
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cctggcgctc agcaccgctg cccaggccga accggtgcag ttcaaggact gcggttctgt   120
ggatggagtt ataaaggaag tgaatgtgag cccatgcccc acccaaccct gccagctgag   180
caaaggacag tcttacagcg tcaatgtcac cttcaccagc aatattcagt ctaaaagcag   240
caaggccgtg gtgcatggca tcctgatggg cgtcccagtt ccctttccca ttcctgagcc   300
tgatggttgt aagagtggaa ttaactgccc tatccaaaaa gacaagacct atagctacct   360
gaataaacta ccagtgaaaa gcgaatatcc ctctataaaa ctggtggtgg agtggcaact   420
tcaggatgac aaaaaccaaa gtctcttctg ctgggaaatc ccagtacaga tcgtttctca   480
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tcgttgaaga ggaggtgctc tgtagcagaa actgagctcc gggtggctgg ttctcagtgg   660
ttgtctcatg tctctttttc tgtcttaggt ggtttcatta aatgcagcac ttggttagca   720
gatgtttaat tttttttttaa caacattaac ttgtggcctc tttctacacc tggaaattta   780
ctcttgaata aataaaaact cgtttgtctt gtcttctgcc                         820




        <210> 560
        <211> 1601
        <212> DNA
        <213> Homo sapiens




         <400> 560
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aaatttacat aattataatg gctgtgtttg acaactggct tgcaacaaaa ttcttgaaaa   120
ttgaataatt ggcccacctg ggctgggatg agccagctgg atcacaccgt tgcccccctca   180
gcctctagga ggcctcagga ttatggcgtc catcttatga tattggccga aaggagacag   240
tcttggaggt gctgcttact gttgaacttc cttttggaat gtatgggaga aggcagggaa   300
aggaatcttt aggcagactg ccatccaggg actgctattc tgttcactga gattcagctg   360
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agtcaaaggt acaggaaggg aaaagagaag agggcaaggc ccatccccca agaaaggaag   480
ggctctgatg cagagggagc aggagctgag gtggagacgg ccactgcctc tctcaccctc   540
tgttccatcc ctctgctcaa gaaaaccagg cttagcagag tgggacagac gcttttttatt   600
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catcttccct ctcctgggag ttcatcacac atcccgagag ggaagagtgt cctgggcaga   720
ggtggcaggc aaagccgggt aaaaactcca gggctgggaa gcaaatgggg ctcagggtga   780
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gtgagtccct gaagcctcca aacgcaacga aatgtctctg gagctcagaa agactggaca  1320
agcccgagac aggcccgcag acttacccga cccagaccaa ccggctccta cccagcaaga  1380
gccgctcgcc ccccacccccg tttatggaga cccagtgagg ccttaggact ctgggaaacc  1440
attccctagt ccactggacc ctccttcctt ctgcaaggct cgtgcctcac ttgatattct  1500
```

```
tgtctatagt cccctcagcc tccaaaaaga agacctccgc ctgccaaaga ccctctttta   1560
ccttcttcag ctctagatcc acgggggcgg ccactcgtgc c                        1601
```

```
        <210> 561
        <211> 797
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(797)
        <223> n = a,t,c or g
```

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     <400> 561
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acacgctgac cctcaggaaa ggcgggaaca ataagctgag cagggtcttc caccgagatg   120
ggcactatgg cttctcagag ccactcacct tctgctccgt tgtggacctc atcaatcact   180
accgccacga gtctctggcc cagtacaatg ccaagctgga cacacggctc tctaccctg    240
tgtccaaata ccagcaggtc cgtgctggcc tgggagccag ggagggtagc acctggctgg   300
ccccaggcct cagtttccta ggtagacccg accaggctat gcatctcccc tcattccgcc   360
acgtatctcc aggaccagat tgtcaaggag gacagcgtgg aggcagtggg cgcccagctt   420
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tacacacgga cctcccagga gctgcagatg aagcgtactg caattgaggc cttcaatgag   540
actatcaaga tctttgaaga gcagggccag actcaagaga aatgcagcaa ggaatacctg   600
gagcgcttcc ggcgtgaggg caaccgacga aagagatgca aggatcctg ctgaactccg    660
agcggctcaa gtcccgcatt gcccgagatc catgagagcc ngcaccgaag ctgggagcag   720
cagctgctgg tgcccagggc ttcggacaac aagagagatt cgacaagccg cattgaacaa   780
gcctcaagcc ggacctc                                                   797
```

```
        <210> 562
        <211> 1772
        <212> DNA
        <213> Homo sapiens
```

```
     <400> 562
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ccaaggccat agggctgctg aatacacatg tgaggggcc gaggggaaga caacagtacc    180
aggagggcag gcagggcacc cccaggctgg ccagtggagg ggtgggggta tcgatcccgc   240
cgggggctgg cttggttgct ggtgccctga gcccttctct gcccgcctgg gtgttgcctt   300
cactgatgga ggtaggcgtc cagccagatg tcaccagact tcttcaggga cctgacgatg   360
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gacttgacca gcggggccac ccggctgtag ttgtgtctcg gcatcctggg gaagaggtgg   480
tgctcgatct ggaagttgag gtgcccgctg aaccagttgg tgaaaagtga gggctccacg   540
ttgcaggtgg ctgccagctg agagctgacc cagtcccggt gcttctcgtg gccgatctcc   600
ttggggatgt ggttcatctg tgtgatccac acgaaccagt ggctttccag gaccctgaca   660
gcaacaaaga agagcagcac cccagggacg ccgtagaagg ggaggtagga taagaagaag   720
cgggcataga agctggcggc ccagagcaaa tccgcccact gcatgcacac cagcatgtac   780
```

```
gccagatttt ccacttcaaa gttcaccagg gtgagcagcg gcgggccgat caggaagaag    840
tacaggtgct gctggttgta gggtaggtat ctgcgtttct tcttgccata ctcgacggat    900
gactccccca ggaggaagac gggcgccacc gtcacgtctg ggtctttgtg gaagatgttg    960
ggcttggcgt ggtgctggaa gtggcggaag ttccaccagt gggcggagaa gccctttagc   1020
tgccccatca cgaacttctg gccacgtgg  ttccaccagg acttcttgaa gatggaggca   1080
tggcccaggt catgctgcag acaccaggac tgagcctgag agatggccag gatgaaggcg   1140
gccagggcac tgggcaccca gccaggaccc aggaggtaga taaggagcca ggccagcacc   1200
tccatggcca ggatgtggcc cagtaggaaa gcaaagaagg tgggactggc atcaaacagc   1260
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ccgagcaaga ccccgaggga agcgaagagc gctcccgggc gccgcctccg ccgccgcccg   1740
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<210> 563
<211> 521
<212> DNA
<213> Homo sapiens

<400> 563
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tacctgaggg gaaggaagca caaaagggac ccgctgcaga ctcagggcaa agggaatgcc    180
atcggtgctg ggacctgtga gcactacagg aggaaacgcg agcgtggtgg gactggctcc    240
aggcacacag gcgaagggca agagggttgg acacgaagcc acaaagctac ttgggttcct    300
ccttcttctc gtttgccttt ttctgcttct gctgcatgat ctccgagtcc ctctgcttgc    360
gggcggcagc agaaagcccg tcatctcggc gctttccctt aaccgagtcg ctctgctttt    420
tcatattctt ctggcgggcg agctcacgct ggttaccgcg ggtcatggcg acggcagcgg    480
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```

<210> 564
<211> 840
<212> DNA
<213> Homo sapiens

<400> 564
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aagggtcgct gttcctgcat cagcaccaac caagggacta tccacctaca atccttgaaa    180
gaccttaaac aatttgcccc aagcccttcc tgcgagaaaa ttgaaatcat tgctacactg    240
aagaatggag ttcaaacatg tctaaaccca gattcagcag atgtgaagga actgattaaa    300
aagtgggaga acaggtcag  ccaaaagaaa aagcaaaga  atgggaaaaa acatcaaaaa    360
aagaaagttc tgaaagttcg aaaatctcaa cgttctcgtc aaaagaagac tacataagag    420
accacttcac caataagtat tctgtgttaa aaatgttcta ttttaattat accgctatca    480
```

```
ttccaaagga ggatggcata taatacaaag gcttattaat ttgactagaa aatttaaaac    540
attactctga aattgtaact aaagttagaa agttgatttt aagaatccaa acgttaagaa    600
ttgttaaagg ctatgattgt ctttgttctt ctaccaccca ccagttgaat ttcatcatgc    660
ttaaggccat gattttagca atacccatgt ctacacagat gttcacccaa ccacatccca    720
ctcacaacag ctgcctggaa gagcagccct aggcttccac gtactgcagc ctccagagag   · 780
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```

```
      <210> 565
      <211> 4345
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 565
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ttgttggtcg agctggcggg tcccgcgggc caggccgtgg aggtgttacc tcattttgaa    240
agtcttggga aacaggaaaa aattcctaac aaaatgtcag cttttcgaaa tcattgtcca    300
catttggatt cagttggtga aataacaaaa gaagatttga tacaaaaatc ccttggtact    360
tgtcaggatt gtaaagtcca aggaccaaat ctttgggcat gtctggagaa tagatgttca    420
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cattatctaa ctgtgaacct taccactctt cgagtatggt gttatgcttg cagcaaagaa    540
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gaggactctc cagctacttt ttattgcatc agtatgcagt ggtttagaga atgggaaagt    2760
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caagtacaaa aacatactgg attacattga ggatgttgaa tagcattcat gatggctttg    4260
ttttggtttg gggcagctgt caccagctaa agcaatgttg ttaaaattag ctcaataaaa    4320
atgtctttaa aatgcaaaaa aaaaa                                          4345
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<210> 566
<211> 984
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(984)
<223> n = a,t,c or g

<400> 566
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gccatggcgg gcgcgttggt gcggaaagcg cgcggactat gtccgaagcaa ggatttccgg    180
gactacctca tgagtacgca cttctggggc ccagtagcca actggggtct tcccattgct     240
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tgttgctatt ctttgacatt catgagattt gcctacaagg tacagcctcg gaactggctt     360
ctgtttgcat gccacgcaac aaatgaagta gcccagctca tccagggagg gcggcttatc     420
aaacacgaga tgactaaaac ggcatctgca taacaatgga aaaggaagaa caaggtcttg     480
aagggacagc attgccagct gctgctgagt cacagatttc attataaata gcctccctaa     540
ggaaaatata ctgaatgcta tttttactaa ccattctatt tttatagaaa tagctgagag     600
tttctaaacc aactctctgc tgccttacaa gtattaaata ttttacttct ttccataaag     660
agtagctcaa aatatgcaat taatttaata ctttctgatg atggttttat ctgcagtaat     720
atgtatatca tctattagaa tttacttaat gaaaactga agagaacaaa atttgtaacc      780
actagcactt aagtactcct gattcttaac attgtcttta atgaccacaa gacaaccaac     840
```

```
agctggccac gtacttaaaa ttttgtcccc actgtttaaa aatgttacct gtgtatttcc      900
atgcagtgta tatattgaga tgctgtaact taatggcaat aaatgattta aatatttgtt      960
aaatgagtat gattaaaaaa aaaa                                            984
```

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<210> 567
<211> 1775
<212> DNA
<213> Homo sapiens
```

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<400> 567
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cggtttggct gactggggag tcggcaggcg gcaggaacca tgcgaggcca gcggagcctg      180
ctgctgggcc cggcccgcct ctgcctccgc ctccttctgc tgctgggtta caggcgccgc      240
tgtccacctc tactccgggg tctagtacag cgctggcgct acggcaaggt ctgcctgcgc      300
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gtctactggc tggtagacaa cgtgatccgc tggtttggag tggtgttcgt ggtcctggtg      420
atcgtgctga caggctccat tgtagctatc gcctacctgt gtgtcctgcc tctcatcctc      480
cgaacctact cagtgccacg actctgctgg catttcttct atagccactg gaatctgatc      540
ctgattgtct tccactacta ccaggccatc accactccgc ctgggtaccc accccagggc      600
aggaatgata tcgccaccgt ctccatctgt aagaagtgca tttaccccaa gccagcccga      660
acacaccact gcagcatctg caacaggtgt gtgctgaaga tggatcacca ctgcccctgg      720
ctaaacaatt gtgtgggcca ctataaccat cggtacttct tctctttctg cttttttcatg      780
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gccattgaga aaatgaaaca gctcgacaag aacaaactac aggcggttgc caaccagact      900
tatcaccaga ccccaccacc caccttctcc tttcgagaaa ggatgactca caagagtctt      960
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ttaccttcta gtcacttgcc ccatgggaat ggaatgagct gggagccccc tccctgggtg     1260
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ggcaaagata ccaggcctgc tgctgaggtc actgccactt ctcacatgct gcttaaggga     1740
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```

```
<210> 568
<211> 1569
<212> DNA
<213> Homo sapiens
```

```
<400> 568
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```

```
gataggcgac acgccggcgg gcggctgagg cgggaatggc tgctgtactg cagcgcgtcg   120
agcggctgtc caatcgagtc gtgcgtgtgt tgggctgtaa cccgggtccc atgaccctcc   180
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caatccagga aattgtagtg actcactggc accgagatca ttctggaggc ataggagata   360
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acatggctct actcttagaa gaggaaaatg ctatcttttc tggagattgc atcctagggg   600
aaggaacaac ggtatttgaa gacctctatg attatatgaa ctctttaaaa gagttattga   660
aaatcaaagc tgatattata tatccaggac atggcccagt aattcataat gctgaagcta   720
aaattcaaca atacatttct cacagaaata ttcgagagca gcaaattctt acattatttc   780
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tatcagtttt caatagatta aataaaatga ttactttaaa aataataaaa tttatctaat  1260
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attcatgcaa atgaattttt ggtgattgaa aaatattaaa ttcccaattt aaagtaaaaa  1560
aaaaaaaaa                                                          1569
```

```
        <210> 569
        <211> 1207
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 569
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ccggcggcgc ccgacggagc agaagagaga gcatggagct ggagaggatc gtcagtgcag   180
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aagctcgggg ggacttggaa gaagctgtgc agatgctggt agagggaaag gaagaggggc   720
ctgcagcctg ggagggcccc aaccaggacc tgcccagacg cctcagaggc ccccaaaagg   780
atgagctgaa gtccttcatc ctgcagaagt acatgatggt ggatagcgca gaggatcaga   840
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accctacac aggggccccc taactcctgt ccccttctc tactcctttg tccatagtg  1140
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aaaaaaa                                                           1207
```

313

<210> 570
<211> 524
<212> DNA
<213> Homo sapiens

<400> 570

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tagccaggct tttgaaggca aacaacactc tcctgaagat gggctaccat tttgagcttc    180
cgggtcccag aatggtggtc actaatctgc tcaccaggaa tcaggataaa caaaggcaga    240
aacgacagga agagcaaaaa cagcagcaac tcaaggaaca gaagaagctg atagccatgt    300
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attccagaat gcaggaattc ttccagccac cgccacctcg gcctcccaac ccccaaaatg    420
tcccctttag tcaacgcagt gaaatgatga aaaagccatc gcaggccccg aagtacagga    480
cagaccctga ctccttccgg gtggtgaagc tgaagagaat ccag                     524
```


<210> 571
<211> 2219
<212> DNA
<213> Homo sapiens

<400> 571

```
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cgccctctcc ggcccttccg gaggctccgg gtttgtgccg tgtgcgtgcg gggctcggcg    120
ctggggcgct cggtaggtct cccgcgggga ggaggcggcg ggggccccgt gtttcttcct    180
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<210> 572
<211> 1671
<212> DNA
<213> Homo sapiens

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agaatctttt caaagcccac atatggtagc acaggttggc ctgtgcatcg gcaattctca    1620
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<210> 573
<211> 1612
<212> DNA
<213> Homo sapiens

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accccagcgt taccatgcat cctgccgtct tcctatcctt acccgacctc agatgctccc        240
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cagagaatat agatgaaatt ttaaacaatg ctgatgttgc tttagtaaat ttttatgctg        360
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tcaggcaaca aaaaagtgac cccattcaag aaattcggga cttagcagaa atcaccactc        660
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tgtgtatttt tattttgaat aaacagaaag aaattttggg tttttaattt ttttttctccc      1560
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        <211> 928
        <212> DNA
        <213> Homo sapiens
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ggtcccactt catggctgat atccagagcc gcagggctgg cgtgtggctc acacagtcca        300
gtatcccata cacatccagc cgctcaaacc agggccagag gaggtaatca atcatggata        360
tacaggttcc accaaagaag gtggtgttct gatactcaag aatctcttcc aggttgctga        420
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cacaagcaat aacagattca tagatcagtt gacattggct ggtctccagg acaggaatgt        660
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cagagcagcg atggaggggg acagggaaag gagaggctag cggacgcgtg ggtcggcccg        900
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<211> 1116
<212> DNA
<213> Homo sapiens


<400> 575
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atgatctatg aagacattaa tacattaata agatacttaa gagttcatta taagctacaa     180
cactttgcaa ataagtatcc agtttaattg taacaaacca caatttgtga gcaaatttaa     240
gaatataaaa aacattaatt agttaaatac aattctctgg gaatatacat tatacctaca     300
gctgttttta cagtgagagt cttccttttt ttttcctttt aattatcaaa atggtaaatc     360
actgtatggt cctggatctc catgctataa aactgaaata tgtatttcca gcgtagcaga     420
tggtgaccag gaaggcaaag aacgatgagg ccgcccagct gttgaagttg tgactgtccc     480
tctcagggga gacggaagat gcatctacaa cagcggcaga gaggtacaag acgaaggcac     540
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ttgttatgta gataatgagg aagaagacgg tgaggaccca gtaaaataca gctacaaaca     660
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<210> 576
<211> 3246
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(3246)
<223> n = a,t,c or g




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<210> 577
<211> 2393
<212> DNA
<213> Homo sapiens
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        <211> 1258
        <212> DNA
        <213> Homo sapiens
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<210> 579
<211> 2003
<212> DNA
<213> Homo sapiens

<400> 579
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```

<210> 580
<211> 1206
<212> DNA
<213> Homo sapiens

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tttatcagta tgggaattaa ttaaaacctt gaatctttgt tttgtctgct tctctgagca        180
caagcctggt cagctggtcc ctgcgggtcc taccagccag cttctctgta gggctctcgg        240
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```
        <210> 581
        <211> 1132
        <212> DNA
        <213> Homo sapiens

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        <223> n = a,t,c or g
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atttcagtag atagagttct tgtcttcatt tttcccagtt tgtagaggtg aactgctttg       480
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aacaggggct gtatatcact tccggcgaag gaaatggaag aatctatggg ctgggaccgg       960
aagctggggt ctggttttga gtctcggctt tgtcttaacc tgtgttgggc gttgcaccgg      1020
```

```
gcgacctcag tttcttcctg tacaaggaaa agtactgacc aaaatgagtt ctacatacat   1080
ttccgctgct ggagatttct ttnntccacc ggcnctcaat agtggtctca tg           1132
```

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<210> 582
<211> 8029
<212> DNA
<213> Homo sapiens
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acgttttaaa agcaaaactt tataaatttc ttaccacact cattcccaag ttttatccca    180
caaagtatag catgaaacaa tgacaacata catattattc aagtaaaatg ctatttaaaa    240
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cacaatttca agttcataat tgaagttaac agtaaaacag atttgctcac atttgcttct    360
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323

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cttactcatg tctccttcca cagtttattt cctcgcttcc tttgcatcta aacctttctt    7980
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```

```
<210> 583
<211> 405
<212> DNA
<213> Homo sapiens



<400> 583
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gcgtcgagtc agctgaaaga acactttgca cagttcggcc atgtcagaag gtgcatttta    180
ccttttgaca aggagactgg ctttcacaga ggtttgggtt gggttcagtt ttcttcagaa    240
gaaggacttc ggaatgcact acaacaggaa aatcatatta tagatggagt aaaggtccag    300
gttcacacta gaaggccaaa acttccgcaa acatctgatg atgaaagaa agatttttga    360
gactgcagcc tattaataaa gttaacataa ctgagaaaaa aaaaa                    405
```

```
<210> 584
<211> 1802
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1802)
<223> n = a,t,c or g
```

```
       <400> 584
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gtccccaaaa tgttagtgtt cactgatcaa gaaggaaatg aggtcagaag gcaaactttt     120
cacttcttct caaacataaa ttgcaagtat cacagaaaat tgtaacaaca catgcaacac     180
gggatggctt tcaacacaca gagagcctaa gcaagaagag tgagtactga aggtctacag     240
aggtcagact gggagcacta ccacaggaag tttgaatcta tccacgcagc tctttcctcc     300
cacagtccag gctcaacacc tcttcctatt ccaaggtggc ttatccatat gcagaaatcc     360
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caagccccga ctcaaattct gtacaggaag ttcccgttgc tgtcaaagaa ctctcggccc     480
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tgaccacttg gcaacgcacc actgccagtt cctctggggc tctcagaatc actggagtac     600
ttctgcagct ctcttggatg acctaggggt gcagcaacag gcacaaagct ctcctccagg     660
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gactctatca cttttcaaagc tgtgctgtga tttgggtctt tagatgaggc ttcatgccct     780
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tcagtgctga catcaaagcc ttcagccaac ctgggaactg accaggactc tggaaattcc    1020
tcatgtaaat accgtatctg ctccatggct tcccacgtca gggtcctggg cggggcacca    1080
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atagggcctg ggcccgccac ccccgggtc gcgaacccac agcgagtgac ggcggcgcaa    1680
acgcgcccgc ccagcaagag actcagggta accgccatgt cgacgcaaac cagccttcag    1740
cagtcggcta ccctcgtgcc aagcttggcg tanaggtgtt caatacagtc tcatttgccg    1800
tc                                                                  1802
```

```
       <210> 585
       <211> 1106
       <212> DNA
       <213> Homo sapiens
```

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gtaaacactg gaataaggaa gggctgatga cttttcagaag atgaaggtaa gtagaaaccg     120
ttgatgggac tgagaaacca gagttaaaac ctctttggag cttctgagga ctcagctgga     180
accaacgggc acagttggca acaccatcat gacatcacaa cctgttccca atgagaccat     240
catagtgctc ccatcaaatg tcatcaactt ctcccaagca gagaaacccg aacccaccaa     300
ccaggggcag gatagcctga agaaacatct acacgcagaa atcaaagtta ttgggactat     360
ccagatcttg tgtggcatga tggtattgag cttggggatc attttggcat ctgcttcctt     420
ctctccaaat tttacccaag tgacttctac actgttgaac tctgcttacc cattcatagg     480
accctttttt tttatcatct ctggctctct atcaatcgcc acagagaaaa ggttaaccaa     540
gcttttggtg catagcagcc tggttggaag cattctgagt gctctgtctg ccctggtggg     600
tttcattatc ctgtctgtca aacaggccac cttaaatcct gcctcactgc agtgtgagtt     660
ggacaaaaat aatataccaa caagaagtta tgtttcttac ttttatcatg attcacttta     720
taccacggac tgctatacag ccaaagccag tctggctgga actctctctc tgatgctgat     780
ttgcactctg ctggaattct gcctagctgt gctcactgct gtgctgcggt ggaaacaggc     840
ttactctgac ttccctggga gtgtactttt cctgcctcac agttacattg gtaattctgg     900
catgtcctca aaaatgactc atgactgtgg atatgaagaa ctattgactt cttaagaaaa     960
aagggagaaa tattaatcag aaagttgatt cttatgataa tatggaaaag ttaaccatta    1020
```

```
tagaaaagca aagcttgagt ttcctaaatg taagctttta aagtaatgaa cattaaaaaa  1080
aacccattat ttcactgtca tttaaa                                       1106
```

<210> 586
<211> 1963
<212> DNA
<213> Homo sapiens

<400> 586

```
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gcgcgccgcg gctcagggag gagcaccgac tgcgccgcac cctgagagat ggttggtgcc  120
atgtggaagg tgattgtttc gctggtcctg ttgatgcctg gccctgtga tgggctgttt   180
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ctcacccctt acattgaagc tgggaagatc caaaaaggaa gagaattgag tttggtcggc  300
cctttcccag gactgaacat gaagagttat gccggcttcc tcaccgtgaa taagacttac  360
aacagcaacc tcttcttctg gttcttccca gctcagatac agccagaaga tgccccagta  420
gttctctggc tacagggtgg gccgggaggt tcatccatgt ttggactctt tgtggaacat  480
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acgctctcca tgctttacat tgacaatcca gtgggcacag gcttcagttt tactgatgat  600
acccacggat atgcagtcaa tgaggacgat gtagcacggg atttatacag tgcactaatt  660
cagttttcc agatatttcc tgaatataaa aataatgact tttatgtcac tggggagtct  720
tatgcaggga aatatgtgcc agccattgca cacctcatcc attccctcaa ccctgtgaga  780
gaggtgaaga tcaacctgaa cggaattgct attggagatg gatattctga tcccgaatca  840
attatagggg gctatgcaga attcctgtac caaattggct tgttggatga gaagcaaaaa  900
aagtacttcc agaagcagtg ccatgaatgc atagaacaca tcaggaagca gaactggttt  960
gaggcctttg aaatactgga taaactacta gatggcgact taacaagtga tccttcttac  1020
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gatcagcttt actatgtgaa attttttgtca ctcccagagg tgagacaagc catccacgtg  1140
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cagtcagtta agccatggtt aactgaaatc atgaataatt ataaggttct gatctacaat  1260
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tggaaaggat cccaggaata caagaaggca gaaaaaaaag tttggaagat ctttaaatct  1380
gacagtgaag tggctggtta catccggcaa gcgggtgact tccatcaggt aattattcga  1440
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ttcatttatg gaaaaggatg ggatccttat gttggataaa ctaccttccc aaaagagaac  1560
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aaaattatct tttcatatct gcaagatttt tttcatcaat aaaaattatc cttgaaacaa  1680
gtgagctttt gttttttgggg ggagatgttt actacaaaat taacatgagt acatgagtaa  1740
gaattacatt atttaactta aaggatgaaa ggtatggatg atgtgacact gagacaagat  1800
gtataaatga aatttttaggg tcttgaatag gaagttttaa tttcttctaa gagtaagtga  1860
aaagtgcagt tgtaacaaac aaagctgtaa catcttttttc tgccaataac agaagtttgg  1920
catgccgcga aggtgtttgg aaatattatt ggataagaat agt                    1963
```

<210> 587
<211> 1612
<212> DNA
<213> Homo sapiens

```
        <400> 587
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cagggggtgg tcgggggcatc cgagcgggtt tgacggaagg agcggcggcg acggaggagg   120
aggatggagg cggtggtgtt cgtcttctct ctcctcgatt gttgcgcgct catcttcctc   180
tcggtctact tcataattac attgtctgat ttagaatgtg attacattaa tgctagatca   240
tgttgctcaa aattaaacaa gtgggtaatt ccagaattga ttggccatac cattgtcact   300
gtattactgc tcatgtcatt gcactggttc atcttccttc tcaacttacc tgttgccact   360
tggaatatat atcgatacat tatggtgccg agtggtaaca tgggagtgtt tgatccaaca   420
gaaatacaca atcgagggca gctgaagtca cacatgaaag aagccatgat caagcttggt   480
ttccacttgc tctgcttctt catgtatctt tatagtatga tcttagcttt gataaatgac   540
tgaagctgga gaagccgtgg ttgaagtcag cctacactac agtgcacagt tgaggagcca   600
gagacttctt aaatcatcct tagaaccgtg accatagcag tatatatttt cctcttggaa   660
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ttctgtagat ttctagttct caactttagc ctgaacgcca acacttgaag gtgtttttca   780
tcctctgtat gttgaaggtg gttatttgta tgtaggaaca ggactgccat cccagctttg   840
catgccaaag aaataaagaa cacactttaa agggcaaact gaagagatga gcgagcaaag   900
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gaagaaaaat tacccttttt gcttgtgttg tgacaacttc atttaatatg gtttaaagat  1020
ttatgagact gtcagctaaa agtcttttca caagaatgtc aacagagaat ggcatctcaa  1080
aatatatata tttctttgca caatttgtga aaccttataa gccatttttcc ccaggtacaa  1140
tgtagttcct gctgatagaa aggaaatatt ttgtcaagag ctttcattta aaagctacta  1200
cctccacaat cacccccaaa cccagaaaat ccccactggc tcttgccagt ctggttttcg  1260
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agaagatgct aatcagatta gaagcaggaa tagttatttg ctgtctgtga aattgagcct  1380
tttggtgcgc cacgtggtgc cagatcaaca cttctatccc tctgcactga ccacgttgtg  1440
aactgggaga cccaaatgca agccatttca tggacatagc aatatacaac caaactctgt  1500
tccttggagt tatattgtaa actcttgcag gtgggagagc agttcacctc cttagctctg  1560
tttgccagct cttacagggt aaaataaacc tgggcaattt atcctcaaaa aa          1612
```

```
        <210> 588
        <211> 1124
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 588
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gccttacaag aaagacataa aatgtccaag ggatatttag aacatttttag ttcttaaagc   180
ttcaacatga gaaatgttga ccacacactg tgaaatcatt tcaataaata acaactgaca   240
ttcatcttta cagttacaaa atagacacac atacatttcc ctgccgtcac attgatctta   300
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acgaagaaat attaacaaat gactagagaa tatctgcaaa ccttctatct tcaaattaaa   420
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gagtgtgcaa gtagattcaa tcataacctt attttacaca taaaatatta acatagaatc   540
ttctaaaaca aacaaataaa taaataaata aataaataaa tagaagactt ctcctaagtg   600
atgctcaaac acattaggcg caatccaggt ggcctctgca gctgtgtctc tctttcctct   660
tctgttcctg taagggcagg gcctccttca ggaacagcca ccaataagct tcctccttcc   720
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ccggctggcg gccaccagga gcaggagcag cagcgccact cgcaggagcc ggggattgct  1020
ggggcggcg gagagcgtgg cgcgggccat ggggctcagc aggcggttcg agcggctgtg  1080
cgaggaggag agctggcaag gagctccgtg gcccgggctc tgtc                   1124
```

```
        <210> 589
        <211> 479
        <212> DNA
        <213> Homo sapiens




        <400> 589
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tcgtggctgc agtgagctat gattgtgcca ctgcactcca gtctggggga cagaatgaaa    120
ctgtctcaaa aagagtaaat gagaccccga gagttggagc agtgccccct agtacacaga    180
aaagacaggg ctttgacacc ccctatctct ggtgttcttg gccctcaaca caggaaaaga    240
aaaaagccat ccaggaggag gaggagagag accaggcctt gcaggccaag gcgagcctga    300
ccatcccgct ggtgcccgag acggaagatg accgcaagct ggcggctctg ctgaagttcc    360
acaccctgga ctcctacgag gacaagcaga aacttaagcg gaccgagatc atcagcccgt    420
tctgggttcc cttttgcccc ggaatccgcc tccaacagca aggtcagcgg cggcctgag     479
```

```
        <210> 590
        <211> 3015
        <212> DNA
        <213> Homo sapiens




        <400> 590
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aaaacctcca cgcaggagta cgcagcaaaa atcatcaata ccaagaagtt gtctgcccgg    180
gatcaccaga aactagaacg tgaggctcgg atatgtcgac ttctgaaaca tccaaacatc    240
gtgcgcctcc atgacagtat ttctgaagaa gggtttcact acctcgtgtt tgaccttgtt    300
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```

```
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aaaaaaaga aaaaagatt gtttaaaaaa aaaaggaatc cataccatga tgcgttttaa     1860
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```

```
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gattgctgtg gaattcctga gacgcggcgc aaacccaaaa atctacgaag cgccgccag      180
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cactgagagc tcaaagctca tgatttctga actggatttc caagactctg ttttttgttct    300
gggattctct gaagaattaa acaaattgtt gcttcagctt tatctggaca acagaaaaga     360
gatcagaacg attctgagtg aattgggcac caagccttcc cagttatcat aaccttgaat     420
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cagccaccct gctccatttg gttcaacaac tggaacaagc attggaagag atgaagacaa     600
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<210> 592
<211> 314
<212> DNA
<213> Homo sapiens




<400> 592
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cgaggacctg  atctgctgtc  cgctgacggg  gaggagttgc  ctatgtgatg  ttcatctact     180
ctcgtctctc  ctagctcgtc  tcggtagagg  ttatgctgtc  tctctgacta  atctctagga     240
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cgacggcatc  tctg                                                          314




<210> 593
<211> 2530
<212> DNA
<213> Homo sapiens




<400> 593
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ttcaagaatc  aaaacatgtt  ctggtaaaca  ttccataatc  cggtaaaatg  ttttcaccca     180
tcactgttaa  gagaaactgt  gtattttata  ctatcaataa  caaaacctaa  tctttgaaca     240
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atccgtggtc  acatgtatac  tgagtcctaa  gatgtatttt  gtcagtatta  gcccaaaatg     360
tccaccatcc  caaattaacc  aggttacaca  tatctcctcc  agttttatg   gtaggatgtg     420
ttagaaccca  tatattacaa  catcattttt  caaaactaac  ctaatcctaa  attctattct     480
aactagtctg  gcaatccttc  attttatctc  cctgtctaca  cattcattag  ataccaaggc     540
aatttcacct  taaaaaatac  tgctaataca  catttagata  gtaatttctg  gtaaaactgt     600
agtttatta   tcaaaaaatg  tgaatttta   ttttagaaat  gtaggtcaag  cattgtcata     660
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```

```
aaatttcaat tccaatttca tcaagaactt gattcacaat atcctggctt tcttcttcgt    1860
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ttttcatgtt ttccttctgg aaattctgca tggtttgtaa tgtcttttgt ggatccatct    1980
tcttgttaac tgcctgcatt gtttttgctg tggtagacat tgctccagcc atcttcattt    2040
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```

```
<210> 594
<211> 903
<212> DNA
<213> Homo sapiens
```

```
<400> 594
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aaaaaaccta gaaacaggtt gaattgaaac ctgtagatca tttttataata ttcatgagca    180
acaacttttt taaagacaaa ggctactgtt ttaatataaa ttaagagctt taacatgatc    240
tcccttttagt gcttttaatt gtcacatggc tgtaaaccaa agacccctcc aaattttaaa    300
tgatcactga tactacttga gcagaaattc tcaggtgtca gtacttttaa tgttgtgtac    360
atcaaattac agtacaaaga tgactataaa caagatgcag ccctcggttt ccatgaacag    420
cacactatta cagtaaacca agtttatatt ccaccatcaa gtgtggctct cccatgactt    480
cgctttgtga tggatcatta agaatatcct caaatccaat agtctcatca ttacccctca    540
aaacatccag tgaaagattt gagcttgaaa gaaatggaag acgctgaacc tgctgcactg    600
ccttgaattc catctgtaat tttagcggag caaatagacc ctgaatgttt ctcagtgtgg    660
aaaaattcat tttatcttgg ttgagctgga aattttttttc tgataattca aggggatgac    720
taggcaaaag ttcatttttc acacaagaaa aacctttccg aagaagatca tgactttcaa    780
aaggtccact tgctgaaagt tcagtaactg gaatactgtc ctttagctca gatccaagtc    840
ctctggcatt catcttccgc agctctgcga acagcctctc tgccccgtta ccgtcagtcg    900
acc                                                                  903
```

```
<210> 595
<211> 879
<212> DNA
<213> Homo sapiens
```

```
<400> 595
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agttacacta tgttgctgtg cttactctag ccatcctgat gttcctgaca tggcttccag    180
aatcactgag ctgtaacaaa gcactctgtg ctagtgatgt gagcaaatgc ctcattcagg    240
agctctgcca gtgccggccg ggagaaggca attgctcctg ctgtaaggag tgcatgctgt    300
```

```
gtcttggggc cctttgggac gagtgctgtg actgtgttgg tatgtgtaat cctcgaaatt   360
atagtgacac acctccaact tcaaagagca cagtggagga gctgcatgaa ccgatccctt   420
ctctcttccg ggcactcaca gaaggagata ctcagttgaa ttggaacatc gtttctttcc   480
ctgttgcaga agaactttca catcatgaga atctggtttc atttttagaa actgtgaacc   540
agccacacca ccagaatgtg tctgtcccca gcaataatgt tcacgcgcct tattccagtg   600
acaaaggtaa ctgccaacag ttgacttttt ccattccgcc ccctcatgtg gtctgtccat   660
gtaatctata aaacctatat aagaccatct tttggagcag ccttttggtt ttgaatttgt   720
atcatctttg cttttcaatat ttaattttttt ccttttttact tatttatatt tgctaaaaga   780
ttacctactt tattattact ctacaaataa ccagcttttg cttttattgc ttggcttagt   840
tggctttttt aatttgcttt ttaaaattac tgttttttat                         879
```

<210> 596
<211> 816
<212> DNA
<213> Homo sapiens

<400> 596
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ctctggtagg aggagagcat cagggcaggc ctttaggctg ttgctctggg cagggggtgg   180
gggtgcgggg gcttacagtg ggggccctta gttggcacag gttcggaagg gccccaggca   240
gacatgaatt ctcctgagac ttgaggtagg ttgcttcagc cagcccgggc ggagaagaag   300
ggcagagagc gaacatagga gtccagtcgg gagcgaaaga gctcactttg cacagtttgg   360
cccagcgggc acaggggatt cttcaccacc agctccacat acagcgcact gtagatgtgg   420
tgcagcacat ctcggatggg tcccacgccc aagtcagtat tcatgacaac tttgatccca   480
gtgggcgtct cgtagtaatg gagtttgtaa cggctagttt ggaaggccag gaagccatcc   540
ttcatgtcta gcggggacat cttgctgaca aacgagcgga tagagaagag catcccgtac   600
atcagcttat actcctcctc cttgggaatc cctgcttgct tcttgcggtg ccattcgctg   660
tagtgcagac acactccatt ccggtcaaac aggtacaggt tgtggacagt catctgcagg   720
gcagggagtg tgagcctcgc tccggggccg cccccactcc ttgggctcgg gttcccggac   780
ccacagcctt ccaaccaggt ggggacccca cccacg                            816
```

<210> 597
<211> 1575
<212> DNA
<213> Homo sapiens

<400> 597
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cttccccaat ttgccacttc cagcagcttt agcccatgag gaggatgtga ccgggactga   180
gtcaggagcc ctctggaagc atggagactg tggtgattgt tgccataggt gtgctggcca   240
ccatctttct ggcttcgttt gcagccttgg tgctggtttg caggcagcgc tactgccggc   300
cgcgagacct gctgcagcgc tatgattcta gcccattgt ggacctcatt ggtgccatgg   360
agacccagtc tgagccctct gagttagaac tggacgatgt cgttatcacc aaccccccaca   420
ttgaggccat tctggagaat gaagactgga tcgaagatgc ctcgggtctc atgtcccact   480
gcattgccat cttgaagatt tgtcacactc tgacagagaa gcttgttgcc atgacaatgg   540
gctctggggc caagatgaag acttcagcca gtgtcagcga catcattgtg gtggccaagc   600
```

```
ggatcagccc cagggtggat gatgttgtga agtcgatgta ccctccgttg gaccccaaac    660
tcctggacgc acggacgact gccctgctcc tgtctgtcag tcacctggtg ctggtgacaa    720
ggaatgcctg ccatctgacg ggaggcctgg actggattga ccagtctctg tcggctgctg    780
aggagcattt ggaagtcctt cgagaagcag ccctagcttc tgagccagat aaaggcctcc    840
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agccatgaag gcccctgccg ccatccctgg atggctcagc ttagccttct acttttttcct   960
atagagttag ttgttctcca cggctggaga gttcagctgt gtgtgcatag taaagcagga   1020
gatccccgtc agtttatgcc tcttttgcag ttgcaaactg tggctggtga gtggcagtct   1080
aatactacag ttaggggaga tgccattcac tctctgcaag aggagtattg aaaactggtg   1140
gactgtcagc tttatttagc tcacctagtg ttttcaagaa aattgagcca ccgtctaaga   1200
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ttcttttggc aagacttgta ctctctcacc tggcctgttt catttatttg tattatctgc   1380
ctggtccctg aggcgtctgg gtctctcctc tcccttgcag gtttgggttt gaagctgagg   1440
aactacaaag ttgatgattt cttttttatc tttatgcctg caattttacc tagctaccac   1500
taggtggata gtaaatttat acttatgttt caaaaaaaaa tcatcaactt tgtagttcct   1560
cagcttcagt cgacg                                                    1575
```

```
        <210> 598
        <211> 1166
        <212> DNA
        <213> Homo sapiens
```

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        <400> 598
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ggttgtggtg ggtcacagtg ttgctgacac ctctggcctc cagccctgca tccctaggca   120
ccatgtgacc aggcagtgag aaggacgggg cctcactccc atgccagact gctcctcggg   180
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caggcacgag gaaggcccgg ggcagggccg ggcgcagcgt ggctggcttc agtaccctcg   600
ggcatcttga ctcctgccct ctgggactgc .aaagggatct gcgggcgcct ctgctgagtc   660
aatcgtctgg taggcactac ggtcctgaga agacccaagg aaaccagtgt ggaccaggag   720
ctcacccccg cgctcccggt acatgtggta gacgaagcag caggagagcg gcttgagcag   780
caagctgagg atggccatgc ccacgccaaa gcggcccgtg tccgtgaggc tgacccgcgg   840
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catgcttatg gcgtcgatgg agtcccgctg agccacagcc cacacgccca aggccaggat   960
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ccagtgacct aggagaatca ccttcaggtt cacagcaggc agctccatcc cgactcaggc   1080
cgagggcacc tgcgccgcag ccgcggggggg ctcctaggct ccgaactcgg ggaacaaact   1140
tgcccggccc cgccccgccc gttgcg                                         1166
```

```
        <210> 599
        <211> 716
        <212> DNA
        <213> Homo sapiens
```

<400> 599
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gaacgcggcc ctcagctccc tccggaagag gccccggggt caggggctgc agccgggtcc    180
ccgtgcgtcg gcccagctcg tccagcaccg ccttctcctt ctggaacatc tgctgccact    240
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tcaggacgtc attgtaatct tcatttttctt tacactgatg gaagatatac tccactccta    360
ggaaaatgtc tcccaaattg tagtcatctg gaaaatcagg ctggggaaat tcacctgctt    420
tcagatgctc atgaaatgga aaagaaagca catcggttgg gacatttcta tctctgtaga    480
ttctattaat gtgctgaata ttcttgttgt caacacagat gatccccagg tcaaatttct    540
gcactcctaa aatcctcctt acaatctcga tcttactgcg aagtggcgct ctcctgatgg    600
ggatgactcg ctgcagattt ctaatcacca aactcatttc aggaagaata accagccctt    660
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```

<210> 600
<211> 802
<212> DNA
<213> Homo sapiens

<400> 600
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gtgcagcagg ccagcttgaa ccacttggaa gcaaaacaga gaccctggac ctgagagcag    180
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tggagactca caccacactg cccaacattc tgaagaagtt caacccttac ctccttggct    540
tctctaccag cacctgggag gggacagcag gactaaatgt ggcagcggaa ggggccagag    600
ctagggacat gccagcccag gcctgggacc tggtagagcg aatgaaaaac agccccgaca    660
tcaacctgga gaaagactgg aagctggtca cactcttcat tgggggcaac gacttgtgtc    720
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ccctggacat cctctctgag ga                                             802
```

<210> 601
<211> 859
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(859)
<223> n = a,t,c or g

<400> 601

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aagaagagtt ttattggcca aaataaatca ttctttggtc ctttggagct ggtggagaaa    300
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gctgtgggaa gaggccgagc gtggctttat cttgcactca tgcaaaagaa actggcagat    420
tatctgaaag tgcttataga caataaacat ctcttaagcg agttctatga gcctgaggct    480
ttaatgatgg aggaagaagg gatggtgatt gttggtctgc tggtgggact caatgttctc    540
gatgccaatc tctggcttga aaggagaaga cttggattct caggttggag taatagattt    600
ttccctctac cttaaggatg tgcaggatct tgatggtggc aaggagcatg aaagaattac    660
tgatgtcctt gatcaaaaaa attatgtgga agaacttaac cggcacttga gctgcacagt    720
tggggatctt caaaccaaga tagatggctt ggaaaagact aactcaaagc ttcaagaang    780
agtttcagct gcaacagacc gaatttgctc acttcaagaa gaacagcagc agttaagaga    840
acaaaatgaa ttaattcga                                                  859
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```
        <210> 602
        <211> 2047
        <212> DNA
        <213> Homo sapiens


        <400> 602
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agccgcccaa agaactggtc aatgagtggt cattgaagat aagaaaggaa atgagagttg    180
ttgacaggca aataagggat atccaaagag aagaagaaaa agtgaaacga tctgtgaaag    240
atgctgccaa gaagggccag aaggatgtct gcatagttct ggccaaggag atgatcaggt    300
caaggaaggc tgtgagcaag ctgtatgcat ccaaagcaca catgaactca gtgctcatgg    360
ggatgaagaa ccagctcgcg gtcttgcgag tggctggttc cctgcagaag agcacagaag    420
tgatgaaggc catgcaaagt cttgtgaaga ttccagagat tcaggccacc atgagggagt    480
tgtccaaaga aatgatgaag gctgggatca tagaggagat gttagaggac acttttgaaa    540
gcatggacga tcaggaagaa atggaggaag aagcagaaat ggaaattgac agaattctct    600
ttgaaattac agcagggggcc ttgggcaaag cacccagtaa agtgactgat gcccttccag    660
agccagaacc tccaggagcg atggctgcct cagaggatga ggaggaggag gaagaggctc    720
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tagcaaaatc ctgaaacaat ggggtccttc cagtctcatc atacaaaatg gcaatcttgg   1920
ctgggtgcgg tggttcatgc ctataatccc agtgctttac aaggctgagg caggaggctc   1980
tcttgagaat aggagttcaa gaccagcctg ggcaacatag caagatcctg tctctccaaa   2040
```

335

aaaaaaa   2047

```
        <210> 603
        <211> 1927
        <212> DNA
        <213> Homo sapiens


        <400> 603
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aaatgcccat cctctcctac tggccctacg gctgtcactg cggactaggt ggcagaggcc     180
aacccaaaga tgccacggac tggtgctgcc agacccatga ctgctgctat gaccacctga     240
agacccaggg gtgcggcatc tacaaggact attacagata caacttttcc caggggaaca     300
tccactgctc tgacaaggga agctggtgtg agcagcagct gtgtgcctgt gacaaggagg     360
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tcagcatgga gctctggcat ccccacctca gtatctaacc tgaaccagcc tggcttttca     540
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aaaaaaa                                                              1927
```

```
        <210> 604
        <211> 630
        <212> DNA
        <213> Homo sapiens


        <400> 604
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```
caaccccgcc gccgggggaca tgtccaaccc ctgaagccgg aggaacgggc cagtcagact      60
gcgcccgaca ggtatattga aaagtctgat tcagttacaa tcagtgtatg gaatcacaag     120
aagatccata agaaacaagg tgctggattt ctccgttgtg ttcgtctttt tccagtgcca     180
tcaaccacct caaagacact ggttatcaga ggttggattt atgcaaactt gggccaaagg     240
acagttagaa gacagtagct gaagaagcat ctgtagggaa tccagaagga gcattcatga     300
agatgttaca agcccggaag cagcacatga gcactgagct gactattgag tcggaggcgc     360
cctcagacag cagtggcatc aacttgtcag gctttgggag tgagcagcta gacaccaatg     420
acgagagtga tgttagcagc gcactaagtt acatcttgcc ttatctctca ctgagaaatc     480
taggtgcaga atcaatattg ttaccgttca ctgaacagct attttcaaat gtacaagatg     540
gagataggct cctgagtatt ttgaaaaaca atagaaagag cccctcacag tccagccttc     600
taggtaacaa atttaaaaac aaaatatttg                                      630
```

```
        <210> 605
        <211> 783
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 605
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ctcctgggcc atggccaact caggcctcca gctcctgggc tacttcttgg ccctggggtgg     180
ctgggtgggc atcattgcta gcacagccct gccacagtgg aagcagtctt cctacgcagg     240
cgacgccagc atccagctga ggtccaaggt ctttgtccta gaatcagagt ggggagggga     300
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ggcctgagag gaatgtaagg aaaccagccc agatcagtcc caaggccaga gtcctttgtc     480
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catcacagaa cctcccccttc cctgccacgc accttccttg gccagctcca ttctggcctc     660
ctccaccacc tgccttgtga ccacatctcc caccacgtcc ccagatctca agaacgcagc     720
tcagcttctc cttcgagctt gactcttaag agggaaaagt gacggaaacc aattcagatg     780
aag                                                                   783
```

```
        <210> 606
        <211> 2513
        <212> DNA
        <213> Homo sapiens
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        . <400> 606
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gtacctgcca gagaacgacc tgaagcggct atgtgactac gtttgtgacc tcctcttaga     180
agagtcaaat gttcagccag tatcaacacc agtaacagtg tgtggagata tccatggaca     240
gttttatgac ctttgtgaac tgttcagaac tggaggtcag gttcctgaca caaactacat     300
atttatgggt gattttgtag acagaggtta ctatagtttg gagaccttca cttaccttct     360
tgcattaaag gctaaatggc ctgatcgtat tacactttg cgaggaaatc atgagagtag     420
acagataaca caggtctatg gattttatga tgagtgccaa accaaatatg gaaatgctaa     480
tgcctggaga tactgtacca agtttttga catgctcaca gtagcagctt taatagatga     540
```

```
gcagattttg tgtgtccatg gtggtttatc tcctgatatc aaaacactgg atcaaattcg      600
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cagaacgaca acgccatatt cctttgagg ccttcgccca tcctgctgac ccattttct     1020
gccctcttct taccccaatt ttcttgtatt accctctaca atatactttt tattgagcac     1080
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gtttatatcc tctatagtaa tagaaaaaca tttaatactt gtaatgctga tgtgttaatt     1920
tgataccagt tgagtagaat gtgatcaatc cagtttacaa tctatcatga gtattattaa     1980
ctaaaatcta tgtgctttc aataggaatc attcttctct tgctgtaaca cttgaccta     2040
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ataaagcact ttagcatctg ttcaggtagt tttgaaaacc aactttttccc cttcaggata     2460
agaacttcca ggttacctaa aaatgcaata aaaatcttta tagtctaagc ttt            2513
```

```
<210> 607
<211> 768
<212> DNA
<213> Homo sapiens
```

```
<400> 607
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gggatgttag cgtgcctgtg cacggtgctc tggcacctcc ctgcagtgcc agctctcaat      180
cgcacagggg acccagggcc tggcccctcc atccagaaaa cctatgacct cacccgctac      240
ctggagcacc aactccgcag cttggctggg acctatctga actacctggg cccccccttc      300
aacgagccag acttcaaccc tccccgcctg ggggcagaga ctctgcccag ggccactgtt      360
gacttggagg tgtggcgaag cctcaatgac aaactgcggc tgacccagaa ctacgaggcc      420
tacagccacc ttctgtgtta cttgcgtggc ctcaaccgtc aggctgccac tgctgagctg      480
cgccgcagcc tggcccactt ctgcaccagc ctccagggcc tgctgggcag cattgcgggc      540
gtcatggcag ctctgggcta cccactgccc cagccgctgc ctgggactga acccacttgg      600
actcctggcc ctgcccacag tgacttcctc cagaagatgg acgacttctg gctgctgaag      660
gagctgcaga cctggctgtg gcgctcggcc aaggacttca accggctcaa gaagaagatg      720
cagcctccag cagctgcagt caccctgcac ctggggggctc atggcttc                  768
```

<210> 608
<211> 698
<212> DNA
<213> Homo sapiens

<400> 608
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cacagataaa gataagtttt actgtcatgc tgcttttaac ataacagagc aacatcacct      60
aggaaaaaag tttgtaggag gatttttaat ccatatattt gtcttatggc tagataaaga     120
tttctctgaa aaaaagaagc atgtcaggaa tctctgggtg ccccttttc ctctgggac        180
ttctagcatt gttgggcttg ctttggtta tatcactgat cttcaatatt tcccactatg       240
tggaaaagca acgacaagat aaaatgtaca gctactccag tgaccacacc agggttgatg      300
agtattatat tgaagacaca ccaatttatg gtaacttaga tgatatgatt tcagaaccaa      360
tggatgaaaa ttgctatgaa caaatgaaag cccgaccaga gaaatctgta aataagatgc       420
aggaagccac cccatctgca caggcaacca atgaaacaca gatgtgctac gcctcacttg      480
atcacagcgt taaggggaag cgtagaaagc ccaggaaaca gaatactcat ttctcagaca      540
aggatggaga tgagcaacta catgcaatag atgccagcgt ttctaagacc accttagtag      600
acagtttctc cccagaaagc caggcagtag aggaaaacat tcatgatgat cccatcagac      660
tgtttggatt gatccgtgct aagagagaac ctataaac                              698
```


<210> 609
<211> 1256
<212> DNA
<213> Homo sapiens

<400> 609
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ggtggaattc cacccccagc gggcgcgggc cggagcacgg gcacccagca tgggggtact       60
gctcacacag aggacgctgc tcagtctggt ccttgcactc ctgtttccaa gcatggcgag      120
catggcggct ataggcagct gctcgaaaga gtaccgcgtg ctccttggcc agctccagaa      180
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cgggctcagg aacaacatct actgcatggc ccagctgctg gacaactcag acacggctga      540
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ccaccaggcc ctgaggaagg gggtgcgcag gaccagaccc tccaggaaag gcaagagact       780
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tcctttccgt gtttctgaag gggaggtcac agcctgagct ggcctcctat gcctca       1256
```

```
    <210> 610
    <211> 417
    <212> DNA
    <213> Homo sapiens




    <400> 610
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ggtgccgggc cagctggacc ccaccactgg ccggcggttc tcggagcaca aactctgcgc       120
ggacgacgaa tgcagcatgt taatgtaccg cggggaggct cttgaagatt tcacaggccc       180
ggattgtcgt tttgtgaatt ttaaaaaagg ggatcctgta tatgtttact ataaactggc       240
acgaggatgg cctgaagttt gggctggaag tgttggacgc acttttggat attttccaaa       300
agatttaatc caggtagttc atgaatatac caaagaagag ctacaagttc caacaaatga .     360
gacggatttt gtttgttttg atggaggaag agatgatttt cataattata atgtaga         417




    <210> 611
    <211> 886
    <212> DNA
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(886)
    <223> n = a,t,c or g



    <400> 611
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tcttctcttt cacactgtat tgtaaaagca aaggggatgg cttgccgaac cagcgggaga       180
gccatatctg cttcattgtc atgtgatcag ggagaacttc attgtcaaaa aggagctgca       240
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ctctaacaga acatcggaca tacttgttct gcaggacgct tttattcttg tctttgccag       360
aactcagccg ctccaggcac aggttcaact gctcatcata gcgatagtag tgggctttag       420
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tggcatccac gaagtagccg cgccataggc agcaaacaat gtgttcattc aagtctttga       780
tcttcactcg aacctcctcc tgaccctcct ttcccagggg agactacaca acgtcggcga       840
cacaacgcgc aggcggaatt ccaccgcntg gactaatgtc tacaat                      886




    <210> 612
    <211> 597
    <212> DNA
    <213> Homo sapiens
```

340

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        <400> 612
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agtactgtcc cagccgatgg gttgtccgac tgggagcaga ggaagccttg aggacctact      180
cacagatagg aattgaagcc accacaaggg cccgggccac caggaagagc ctgctgcatg      240
tcccctatgg agacggcgaa ggggagaaag tggacattta cttccccgac gagtcgtctg      300
aagccaccac aagggcccgg gccaccagga agagcctgct gcatgtcccc tatggagacg      360
gcgaagggga gaaagtggac atttacttcc ccgacgagtc gtctgaagcc ttgcctttct      420
tcctgttctt tcacggagga tactggcaga gcggaaggca ccctggacca catggtagac      480
caggtgaccc gcagcgttgc gtttgtccag aagcggtatc caagcaacaa gcttttcct       540
ggtgagtggg gtctttgacc tggagcccat cgtgtatact tcacagaacg ttgctcc         597
```

```
        <210> 613
        <211> 1163
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 613
ccgagtcgac gatttcgtgg caggcgccag tcgcaggtgt gctgctgagg cgtgagaatg       60
gcgtcccgcg gccggcgtcc ggagcatggc ggaccccag agctgtttta tgacgagaca      120
gaagcccgga aatacgttcg caactcacgg atgattgata tccagaccag gatggctggg      180
cgagcattgg agcttcttta tctgccagag aataagccct gttacctgct ggatattggc      240
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gatatcagcc ctgccatgct ggatgaggct gtggaccgag agatagaggg agacctgctg      360
ctgggggata tgggccaggg catcccattc aagccaggca catttgatgg ttgcatcagc      420
atttctgctg tgcagtggct ctgtaatgct aacaagaagt ctgaaaaccc tgccaagcgc      480
ctgtactgct tttttgcttc tcttttttct gttctcgtcc ggggatcccg agctgtcctg      540
cagctgtacc ctgagaactc agagcagttg gagctgatca caacccaggc cacaaaggca      600
ggcttctccg gtggcatggt ggtagactac cctaacagtg ccaaagcaaa gaaattctac      660
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<213> Homo sapiens

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<213> Homo sapiens
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        <213> Homo sapiens
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<212> DNA
<213> Homo sapiens


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<212> DNA
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<211> 1056
<212> DNA
<213> Homo sapiens

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<212> DNA
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        <211> 1775
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<212> DNA
<213> Homo sapiens

<400> 628

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```

<210> 629
<211> 1114
<212> DNA
<213> Homo sapiens

<400> 629

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cacaagtcgt ccctcaactc gtccccgtgg agtggcctca tggccctggg aaacagccgg   300
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aacacatcat cttgcatctc atgggttcta tgaatttta aattggtttg atgaaagagc    600
atggtatcca ctaggaagaa tagtaggtgg tactgtttac ccagggttga tgataaccgc   660
```

```
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tcagttcaca tactatttat gggtaaaatc tgtaaaaact gggtcagttt tttggacaat      960
gtgctgctgc ttatcctatt tctatatggt ctctgcttgg ggtggttatg tatttatcat     1020
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```

```
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        <211> 851
        <212> DNA
        <213> Homo sapiens
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cggccctcag ggactcggcc tcgaagaatc agcatggggt ccttgtcgtc ctgcagctgc     480
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cggggcggga ccgtcagggg ggtgggtgct acgctggggc ccacccaacc ccgcgcggga     780
cccaccggaa gctgtggctg caccaggccc ggctcaggaa ggcgtccgaa agcaccacga     840
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```

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        <211> 1320
        <212> DNA
        <213> Homo sapiens
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tctagcccct cactgcctgg ggagctggag gcttaaatgc ctgagaggag tgaggtgttg     180
aagaattgcc tgcatcccag ggatggagcg tggtggaaga ccaactcagt gcctcacagg     240
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aaggcgtcca ggggctcaac cacggcatgg acaaggttgc ccatgagatc aaccatggta     660
```

```
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<210> 632
<211> 3149
<212> DNA
<213> Homo sapiens

<400> 632
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aacgatgaag gtgatgattg tgcctgtggc caagaccggg agaaccctgg atccctacac      180
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        <211> 1841
        <212> DNA
        <213> Homo sapiens
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<210> 634
<211> 1324
<212> DNA
<213> Homo sapiens


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ggag                                                                 1324


    <210> 635
    <211> 519
    <212> DNA
    <213> Homo sapiens



    <400> 635
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acaaccaaag caagaaagcc tcatgttttg ggggaaagtt tgatatcagc aatgtccaga     180
caagagccaa agatgtttgt cttgctctat gttacaagtt ttgccatttg tgccagtgga     240
caaccccggg gtaatcagtt gaaaggagag aactactccc ccaggtatat ctgcagcatt     300
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ggaactgcag gtttgagagg taagactgga ccgctaggtc ttgccggtga gaaaggggac     480
caaggagaga ctgggaagaa aggacccata ggaccagag                           519
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356

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        <211> 1396
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1396)
        <223> n = a,t,c or g




        <400> 636
ttgaaaccag caccttccct ttctctgagt cctgcctcct tctgcagaag ggagctcaaa      60
agaactttgt tgttttgcct tttactctgg ggtgaaagcg gcaggaggta tgtgagatgg     120
tgaaatgatt tgcttctgcc atgctggggt cacgggtgga tcgccctaaa ctctcggtgg     180
cccccctcagt agttttggaa gaggaccaag tccttgtctc tccagcagtg gacctggaag     240
caggatgccg gctcagggac ttcactgaga aataatgaa tgtcaaagga aagtaattc       300
tgtcaatgct ggttgtctca actgtgatca ttgtgttttg ggaatttatc aacagcacag     360
aaggctcttt cttgtggata tatcactcaa aaacccaga agttgatgac agcagtgctc       420
agaagggctg gtggtttctg agctggttta acaatgggat ccacaattat caacaagggg     480
aagaagacat agacaaagaa aaaggaagag aggagaccaa aggaaggaaa atgacacaac     540
agagcttcgg ctatgggact ggtttaatcc aaacttgaag gaatccgaat aactaaactg     600
gactctggtt ttctgactca gtccttctag aagacctgga ctgagagatc atgcggttaa     660
ggagtgtgta acaggcggac cacctgttgg gactgcgaga ttctcaaggg gaaggactgg     720
gtctcatttc tcccatctca gcgcttagca ggatgacctg gtatagagca gggaactggg     780
aaatgtgggt cagggggatca gacactccag ttgggtcttt tatataaatt aaatggcaaa     840
aggctccata cccttctcct tctttcctac cctccacttt atctgcaaaa tgggaatgat     900
gataacaccc acttcataga atggtcatga agatcaaatg agagaataaa agtcaagcac     960
ttagcctctg gtgcacaata agtattaaat aagtatacct attcctcctt ttccttttt   1020
taaaataata ttaccaaatg tccagcttat acacatttac aagacttagc tagtgggcta    1080
tgttagagct actaaaagat ctttgacaag ctaaaactaa gatgcaatga atgaggtgta    1140
acgaacaaga gagtttttaag ttcagaaatg gttacagaag tataagacag ctgtgtgggt   1200
gttttttggt ttttggtttc tggtttacaa tctcgtcatt caacaaagat gggagtttta    1260
tagaactaaa agcaccatgt aagctactaa aaacaacaac aaaaaaggct catcatttct    1320
cagtctgaat tgacaaaaat gccaatgcaa ataaaatga ttacttttta ttttaaaaaa   1380
aaaaaagnaa aaaaaa                                                    1396
```

```
        <210> 637
        <211> 1475
        <212> DNA
        <213> Homo sapiens




        <400> 637
attcccgggt cgacgatttc gtggccgtcc ggcctccctg acatgcagat ttccacccag      60
aagacagaga aggagccagt ggtcatggaa tgggctgggg tcaaagactg ggtgcctggg     120
agctgaggca gccaccgttt cagcctggcc agccctctgg accccgaggt tggaccctac     180
tgtgacacac ctaccatgcg gacactcttc aacctcctct ggcttgccct ggcctgcagc     240
cctgttcaca ctaccctgtc aaagtcagat gccaaaaaag ccgcctcaaa gacgctgctg     300
gagaagagtc agttttcaga taagccggtg caagaccggg gtttggtggt gacggacctc     360
aaagctgaga gtgtggttct tgagcatcgc agctactgct cggcaaaggc ccgggacaga     420
cactttgctg gggatgtact gggctatgtc actccatgga acagccatgg ctacgatgtc     480
accaaggtct ttgggagcaa gttcacacag atctcacccg tctggctgca gctgaagaga     540
cgtggccgtg agatgtttga ggtcacgggc ctccacgacg tggaccaagg gtggatgcga     600
```

```
gctgtcagga agcatgccaa gggcctgcac atagtgcctc ggctcctgtt tgaggactgg    660
acttacgatg atttccggaa cgtcttagac agtgaggatg agatagagga gctgagcaag    720
accgtggtcc aggtggcaaa gaaccagcat ttcgatggct tcgtggtgga ggtctggaac    780
cagctgctaa gccagaagcg cgtgggcctc atccacatgc tcacccactt ggccgaggct    840
ctgcaccagg cccggctgct ggccctcctg gtcatcccgc ctgccatcac ccccgggacc    900
gaccagctgg gcatgttcac gcacaaggag tttgagcagc tggcccccgt gctggatggt    960
ttcagcctca tgacctacga ctactctaca gcgcatcagc ctggccctaa tgcacccctg   1020
tcctgggttc gagcctgcgt ccaggtcctg acccgaagt ccaagtggcg aagcaaaatc   1080
ctcctggggc tcaacttcta tggtatggac tacgcgacct ccaaggatgc ccgtgagcct   1140
gttgtcgggg ccaggtacat ccagacactg aaggaccaca ggccccggat ggtgtgggac   1200
agccaggtct cagagcactt cttcgagtac aagaagagcc gcagtgggag gcacgtcgtc   1260
ttctacccaa ccctgaagtc cctgcaggtg cggctggagc tggcccggga gctgggcgtt   1320
ggggtctcta tctgggagct gggccagggc ctggactact ctacgacct gctctaggtg   1380
ggcattgcgg cctccgcggt ggacgtgttc ttttctaagc catggagtga gtgagcaggt   1440
gtgaaataca ggcctccact ccgaaaaaaa aaaaa                               1475
```

```
<210> 638
<211> 1131
<212> DNA
<213> Homo sapiens
```

```
<400> 638
gagtggtaaa attcacagaa gttccaggtt catcatgtca ggatcattcc ttgtgcaaag     60
tttgatgtag atgaagataa agtggtttct tggtcaataa ttgcaattgc tttcttttaa    120
agtcagtggg tttcttgtat agttctatta caattggccc aagtttaatt tcatccatct    180
ccatgaaagc aaaacacttg gtgctggtaa acctttttt aggcttgtag tgtttgaatt     240
caaagaagat agctgcacct ttggttaatt tttcaacatg cttctggagc tcaatgtcca    300
cattaaaatg aacatatgta tcttcttttc ttgaagccac aggagtatct tgcacaggag    360
ttaagtctat gccattcaga tcctttacac taactgtaat atagggattg atgcactgcc    420
cagcatcttt caaaccaatt ttctcaattc tgatagtgag taatgtcatt cctggttccg    480
atggcaacct tggtaataaa gtaccgggaa ctctagcagg aaaagaatca ggagaccctg    540
ctccagcacc accctcttc tcatcttctt caaattccaa attctcttct tcaccaggtg    600
ccaaaattct tcttaatggg acaggctgaa catcaaatgg gaattcttta ttatatgtaa    660
gaatattctt taggattggt tctagcttct tcaggtcctc cagtttaaat tcttcttgag    720
actgtgtgga ctgtaaagct gcacttcgca attccaagca tgttgcaatt ttgcctatgg    780
ttttcttttg ttcttctgtg aattcagaat tattgtgttg agcttgggcc tccttttgta    840
gatgtcttgc taatatctga tactcgtcta tcgcctccac cagctggccc caagagtcga    900
agtcggcgcc tctcctaaaa ctggcgcccc agcgctgcag cagactccgg gtcacctccg    960
acatggccgg tccccacccc gtcccctccc gcccctaccc cagcaaggcc gggttctagg   1020
gcgccatcct cccccggcct ggccccgaca ttaacagggc caggaggaac cgctacggcc   1080
accaccgcca cccgccgagg agccgcccaa gcccatttgc cgcccatgta t            1131
```

```
<210> 639
<211> 1844
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(1844)
<223> n = a,t,c or g
```

```
        <400> 639
cagaactntg ggagtccgag gcagacagat cacctgaggt caggagctca agaccagcct        60
gaccaacatg gcgaaaccct gtcgccacta aaaacacaaa attaggcctg gtggcgcatg       120
cctgtaatcc cagccactcg gtaggccgag gcaggagaat cgcttgaacc caggaggagg       180
gaggttgcgg taaactgaga tcgcgccatt gcattccagc ccgggcacca agagcaaaac       240
tcggtctcaa ataaataagg ctctaacaat tgttctcata ttttaacatc cacaatgtga       300
ttcaagatgt aatcaacata aagcttgatt gcattatttt gcatgctaag ttttccaaat       360
ccagcttcgt gtcacaccta cagcacatct cactcaagct ggccacatcc ctgccatcca       420
gacgtaaaac agtcacaaga cagggctggc agggccgcgg aggaggccgg caggggccat       480
cacggagtgc ccatcctgca ctgtggtccc agcaagtttc ttcctcctgg caagaagcct       540
gtcccaggct ggcaggggac agcgtgaggt gcagcctatg gactgggaaa ggggtgtgga       600
agggccacac ctaagtccta aaatccaggc ccaaaagtgg cccaactcac ttctctgact       660
ttaatcacac aggcataccc ggtggcaaag gagtatggga aatggagtca ggctgggtag       720
ccacgagccc aggaagaagg gagaacagac ttggagaggg caggagtctc tggccaccag       780
gggctaaaga gccttcgatg aggcagtgat gtggggtcct gggctcagac ccagggtggg       840
tggctaaggt gcccttgcca ggacttagcc accccaacag agatgggttt cgtgcccacg       900
agagtgcctg tgccttgtga cgagaattca ccatgttttt gtctctgcag gcagagaaca       960
gcattgactt catcagcagg gagctgtgtg cgcattccat caggaagctg caggcccatg      1020
tcctgttgat caagtgagtc tggacccatc cccttcagtc accccccaag agacatggg       1080
cgccaggaat ctccgggagg gggccctggc atgaggctcc aagttctctg cgtgtcgacc      1140
acatcgctaa gactcaagat ctttttgggg aagcccccct ggcagcaggg tcatggaagg      1200
aggaaggtca gaggagggga gggctcaggc agcaggggat gggccggggc tgtcccatgc      1260
ctttccacag gtgtcagcgg ggggcatgcc caggtaaggc tccataacca gtgagcccag      1320
tctcgactca ctgcaacctc tgcctcctgg attcaaacga ttctcctgcc tcagcctccc      1380
gagtagctgg gactacaggc gcccgccacc aggcctggct tatttttgta tttttagtag      1440
agacgaggtt tcgccatgtt ggccaggctg ctctccatct cctgacctca tgatccgcct      1500
gcctcggcct cccagtgttg ggattacagg cgtgagccac cgtgcgtggc ccaccataga      1560
caatttttaa gccataaaaa gaaacgaagc actgacacgg gctccagcat ggatgagcct      1620
ttaaaacatc gcgctaagtg gacgaattca gacacaaccg tctacgtgtt gtatggctgc      1680
attcacgttc aagtcaagtc caaatagggc acactgcaga gacaaagcca ggtcatggtt      1740
gctcaggacc ggaagcctgt tgggggtggg ggggtggggt gtgtgtgtgt gtgtgtaagc      1800
tcagaggttt gcgatttctt tgggggtgat gaaaatgtaa ttgt                      1844
```

```
        <210> 640
        <211> 1210
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 640
ggaagtagga ggagagtcag gactcccagg acagagagtg cacaaactac ccagcacagc        60
ccccтссgcc ccctctggag gctgaagagg gattccagcc cctgccaccc acagacacgg       120
gctgactggg gtgtctgccc cccttggggg ggggcagca cagggcctca ggcctgggtg       180
ccacctggca cctagaagat gcctgtgccc tggttcttgc tgtccttggc actgggccga       240
agcccagtgg tcctttctct ggagaggctt gtggggcctc aggacgctac ccactgctct       300
ccgggcctct cctgccgcct ctgggacagt gacatactct gcctgcctgg ggacatcgtg       360
cctgctccgg gccccgtgct ggcgcctacg cacctgcaga cagagctggt gctgaggtgc       420
cagaaggaga ccgactgtga cctctgtctg cgtgtggctg tccacttggc cgtgcatggg       480
cactgggaag agcctgaaga tgaggaaaag tttggaggag cagctgactc aggggtggag       540
gagcctagga atgcctctct ccaggcccaa gtcgtgctct ccttccaggc ctaccctact       600
gcccgctgcg tcctgctgga ggtgcaagtg cctgctgccc ttgtgcagtt tggtcagtct       660
gtgggctctg tggtatatga ctgcttcgag gctgccctag ggagtgaggt acgaatctgg       720
tcctatactc agcccaggta cgagaaggaa ctcaaccaca cacagcagct gcctgactgc       780
```

```
aggggggctcg aagtctggaa cagcatcccg agctgctggg ccctgccctg gctcaacgtg      840
tcagcagatg gtgacaacgt gcatctggtt ctgaatgtct ctgaggagca gcacttcggc      900
ctctccctgt actggaatca ggtccagggc cccccaaaac cccggtggca caaaaacctg      960
gtgaggcctc ccccttccca agtccattcc cactgtaggc cgatgcctgt gcaaaggacg     1020
cagtgccata tcagagagga tccttgaaga ggactcaccc caagcaaggg aaaattggtg     1080
ggggaacttc tgccttcctg gtttccttga ctttggcctc ctcctcttcc tccttatctt     1140
ctccaacctc cttcctttat ttgttccaca gactggaccg cagatcatta ccttgaacca     1200
cacagacctg                                                            1210
```

```
      <210> 641
      <211> 1108
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 641
catatgaaca tttcaataaa ggtagaaaaa gcacttgata ttgaatgctt tcctcttgat       60
tttacaacca agacaaggaa gtccattatc actatttcta ttcaatagtg gacatactag      120
ccagcaacaa aactaaaagg tataaagatt acaggaaagt taaaccatct ctattcacag      180
actgcaagat tgtaatcaca taaattccaa aagactctac agactctaca gtcccacggc      240
agccccttcc tccgcgccgc ggcggcgcct ccggcccacg tcacgctcgc gccattgttt      300
cccagccgct gctcgctggg accccgccag ccctcgagcg cggccattcg ccgcgttctg      360
ccctctcccc cctttcctca cgctggtggt ggccctttcc tcagtcctgc tgatgtcctc      420
cagctgattc caggctgttc ccggccaccc ctgaggccgt cctttcgctt cttgtaaaag      480
cctccccgcc tcctgagctc cctcggtcgc ctcccgagaa gccaacgggc ctctctggtg      540
gagcgctagg ttgacagcgt tttagcagga ccgcagaaa ccggggagat cctcttacga      600
ggaaaaactc caagattaca tccctgttat ctttcctcca agtagtttct gatcataagt      660
tatttgttta aaaatgatgt tttaattaga atttatttga tggcttttaa aaaactttta      720
ctgacactca acatgtttgt ttttgtagga actgactaag actttggaac agaaaccaga      780
tgatgcacaa tattatcgtc aaagagctta ttgtcacatt cttcttggga attactgtgg      840
tgcagatgct aatttcagtg actggattaa aaggtgtcga agctcagaat ggctcggaat      900
ctgaggtgtt tgtggggaag tatgagaccc tcgtgtttta ctggccctcg ctgctgtgcc      960
ttgccttcct gctgggccgc ttcctgcata tgtttgtcaa ggctctgagg gtgcacctcg     1020
gctgggagct ccaggtggaa gaaaaatctg tcctggaagt gcaccaggga gagcacgtca     1080
agcagctcct gaggataccc cgccctca                                        1108
```

```
      <210> 642
      <211> 2418
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 642
cggagattcg tacgagcggc accatggccc cgcgggggcg gcggcggccg cggcctcaca       60
ggtctgaggg cgcaagacgt tcaaagaaca ctttagaaag aacacattcc atgaaagata      120
aagctggtca aaagtgcaag cctattgacg tgttcgactt tcctgataat tctgatgtct      180
caagcattgg caggctgggt gaaaatgaga agatgaaga aacttatgag acctttgatc      240
ctcctttaca tagcacagct atatatgctg atgaagaaga attctccaaa cattgtggac      300
tgtctctctc ttcaactcct ccaggaaaag aagcaaaaag aagttcagac acttctggaa      360
atgaagcaag tgaaatcgaa tctgtaaaaa ttagtgcaaa aaagccagga agaaagctca      420
```

```
ggcccattag tgatgactct gaaagcattg aagaaagtga tacaaggaga aaagttaaat    480
cagcagagaa aataagtaca caacgtcatg aggttattcg aaccacagcg tcttcagaac    540
tttcagagaa accagctgag tctgtcactt ctaaaaagac aggacccctt agtgcccagc    600
cctctgttga aaaagagaac ttggcaatag aaagtcaatc gaaaactcag aaaaaaaggg    660
aagatatctc atgacaaaag gaagaaatca agaagtaaag ccataggctc agatacttct    720
gacattgtgc acatttggtg tccagaagga atgaaaacca gtgacatcaa ggagttgaat    780
attgttttgc ctgaatttga gaaaacccac ctagagcatc aacaaagaat agaatctaaa    840
gtttgtaagg cagccatcgc cacattttat gttaatgtta agaacaatt catcaaaatg     900
cttaaagaaa gccagatgtt gacaaatctg aaaaggagga atgctaagat gatttcagat    960
atcgaaaaga aaggcagcg tatgattgaa gtccaggatg aactgcttcg gttagagcca    1020
cagctgaaac aactacaaac aaaatatgat gaacttaaag agagaaagtc ttcccttagg    1080
aatgcagcat atttcttatc taatttaaaa cagctttatc aagattattc agatgttcaa    1140
gctcaagaac caaacgtaaa ggaaacgtat gattcatcca gccttccagc tctgttatt     1200
aaagcaagaa cacttctggg agccgaaagc catctgcgaa atatcaacca tcagttagag    1260
aagctccttg accaggatg agaagagcag tctactaaaa tgtgcctata ggaagactag    1320
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aaattaagtt gatgtgaaca taattttgat taattaataa ggcgatttct cctgaattta    1620
caccaaagct aatttttaat gaaattgggt ttacaggaag gtaaaaaaca aaaattggga    1680
aaggcaaagt aataaaactt agtttatata aacaggttga atgatatatt tatcaaatct    1740
cacagacatc aggcaaatta tagcctggtg acaaaagtgt tcatagtgaa ttagttactc    1800
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tgatggttta tgaggattct gggtttcatt gctcctagtt tcatctgctt catctgttgt    2040
aaactcttct tcctctttga aaaaaaacag gagacatact tcagcaggta atgggaaaca    2100
gtcagatttg aagttttttg ctttacatac agggtcatga catttttat accaaacttc     2160
attttcaga tcaaccagaa tccttttgt ttaaaaaaaa aaaaagtat taataccaag      2220
actgggtaga aaacaaaatc cagctgcatg ctgttccaag aaatatgcct aagacttaaa    2280
gatggagaaa aattaaaaag taaaaggata aggatagata cataccaatc aaaacggtgg    2340
ttgccaaaaa tcacacaaaa tgaactgcag ggcaaaaagt agatactgat gaaagttccc    2400
ccaggaagat gtaacaat                                                 2418
```


```
        <210> 643
        <211> 1166
        <212> DNA
        <213> Homo sapiens
```


```
        <400> 643
        atgttcccac gaaagcgata ttcccgtcca cccagtgtaa aacgccggcc cgtgcccttg    60
        cttattatta agcatccatt tagggggaaag gtttcaatgc gccgtcccgt gttaagatag   120
        ggcccccccaa ggaacctttta aaaaggcccc ccccttttttt ttttttttgaa agtataaaaa  180
        tcatttttact ttaatacaaa atcacataaa gaaaggcatg ttggctaaat caaatattca    240
        ctaaatatca gtgaagtcac cactggaatc tcaatagcac attttcctgc tttcttttct    300
        cccttctgct aaccattgaa gaccagggtc atccgtggga gcagatgagt aggacacgcg    360
        tctgcacgct ggaggccctg ggggttgaca tgggagcagg aagtggaccc ccccaccctg    420
        cacatccctt ctgttttttct tgatttcagt ctcactggcc caggccaaat cttcaagggt    480
        gtctagttct gcagccaggg agaaagtgat gccaagagaa cctcgtctcc tccctcctca    540
        gtctgctttg aaggggaaat aaatacacag gcctagtgtg tctgtgtggc acagggaggt    600
        ggttttgcca ggcatcttgg aaggttgtct tctagaatca gagccatagc cttacttgtg    660
        gccttggatc taggtctgtt tccccgatcg aaaaaagaac agctttttta tgattgtctt    720
        ctcctccttg ttcctgccag catttttggc actagtaacc acagcatctt tttctcttct    780
        tcctcctggg ccttctcttg gtggaatcag gccactcccc gctggccgga gggctctgtc    840
        tccgcagccc ctccacctcc ttcctgaggt ggtccctctc catcttcagc tcctccagcg    900
```

```
ccaggctgcc ctcattcacc agcgcctcca gcatctccag gacgcggacg actttgaact      960
gcagctgcgt cacccggggg tcgctgccca gggccataag ctcgcggccc aacaggtagg     1020
agatgtcata cacgtcctcg gcggtcagct ggaaggggct cttgcccagc ccccctcgg      1080
gcccaacctc gtccctctcc tcgtcctcct ctccctcctc ctattcctct tctcgcacag     1140
ggggctcctc catggccacc cagacc                                         1166
```

```
        <210> 644
        <211> 1024
        <212> DNA
        <213> Homo sapiens




        <400> 644
cccccgaaatg accaccgtct cacccaatca agacgtgatt catcaagtaa gacccgcgcc      60
tttctggtcc ccaggttcct tcccgctcac gccggagtca cttccgaaga gagaaccgcc     120
atgaagagag aaggggggtgc cgcccacctc tgctccgaca gcctcccgga gtcccagcag     180
caagacggca accacgcacc caacttctcc agccacggct catgccgccg tcgccagcgg     240
cgccgacatg acaaggcgct gcatgcccgc taggccaggt ttcccctcat ccccagcccc     300
ggggtcgtcg cccccgcgct gccatctgag acccggtagt accgcccatg ctgcagcggg     360
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cgcggggggca agggtatgag gggagggctg cagaccgccg ctcttccagt tcccgccatc     480
ctccgcgagc tcaggcgttg gcatttcggg gcctggcaaa tccccgcccc gcctccgcgc     540
aggggctact gggagttgga gtttgcttct ctgtagttgg cagctgctc ttggtctagt     600
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cctttgcaag agtttgaccc gggaccctaa ctgcttaatg catatttaga tcgtttttctg     720
tacgttgtca gttctactga tcctagtggt ttagtaatat aaacctttc tatgttgtgg     780
gtgaaattat gtaacctgtg atgagggaat cccttccacg aattactttg tagtccagcg     840
tgcacgctag ttcatactta aaagaacttg cagatttgga atgtgacgtg ttttctcttt     900
cagtaacttc gacgcctctc caagaggcta atttttttt aaagattttg tgggagctat     960
gtaatgagat ggggagtttc atctaatgac atcctctgac aataaaacat gtttaaattc    1020
ccta                                                                 1024
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        <210> 645
        <211> 499
        <212> DNA
        <213> Homo sapiens




        <400> 645
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gcctcagcct gggggggtcac cctgagcccc aaagactgcc aggtgttccg ctcagaccat     180
ggcagctcca tctcctgtca accacctgcc gaaatccccg ctacctgcc agccgacacc     240
gtgcacctgg ccgtggaatt cttcaacctg acccacctgc cagccaacct cctccagggc     300
gcctctaagc tccaagaatt gcacctctcc agcaatgggc tggaaagcct ctcgcccgaa     360
ttcctgcggc cagtgccgca gctgagggtg ctggatctaa cccgaaacgc cctgaccggg     420
ctgcccccgg gcctcttcca ggcctcagcc accctggaca ccctggtatt gaaagaaaac     480
cagctggagg tcctggagg                                                  499
```

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        <210> 646
        <211> 709
        <212> DNA
        <213> Homo sapiens




        <400> 646
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ggatctttct tccttctgga aatctttgac tgtgggtagt tatttatttc tgaataagag     180
cgtccacgca tcatggacct cgcgggactg ctgaagtctc agttcctgtg ccacctggtc     240
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ctcctctggc ccattaacaa gcagctcttc cggaagatca actgcagact gtcctattgc     360
atctcaagcc agctggtgat gctgctggag tggtggtcgg gcacggaatg caccatcttc     420
acggacccgc gcgcctacct caagtatggg aaggaaaatg ccatcgtggt tctcaaccac.    480
aagtttggaa atttgacttt ctgtgtggct ggagcctgtc cgaacgcttt gggctgttag     540
gggtaagtca aaagtgcatt ccccccctgcc tcacacattt ttttggttca gccccccccac   ·600
ttgtcttttt gctcctggtc attcagaact tgcagaagaa tcaacagagt ttttacttga     660
tgaaatggtc ctaataaact gctttttttat tcttgctagg aaaaaaaaa               709




        <210> 647
        <211> 1498·
        <212> DNA
        <213> Homo sapiens




        <400> 647
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gggcccggga ggtagagaaa gtcagtgcca cagcccgacc gcgctgctct gagccctggg     180
cacgcggaac gggaggggagt ctgagggttg gggacgtctg tgagggaggg aacagccgc     240
tcgagcctgg ggcgggcgga ccggactggg gccggggtag gctctggaaa gggcccggga     300
gagaggtggc gttggtcaga acctgagaaa cagccgagag gttttccacc gaggcccgcg     360
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gaagaggttc ttgggggtcg cccttctgag gaggctgcgg ctaacagggc ccagaactgc     480
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tagggactgg aggtgccgct actaccatgg gtaattcctg tatctgccga gatgacagtg     780
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tggcagaaac agatgaagga tggttggatg ttgtccagtc tttaattaga gttattccac    1080
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tacagtgtct gttacagtcc cacccacag tcatgctttt tgcacttatc gcactggaaa     1380
agtttgcaca gacaagtgaa aataaattga ctatttctga atccagtatt agtgaccggc    1440
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ttggtcacat tggagtcctg gggctaatga tcctgattat ctgaaacgtc aagttggt   1498

          <210> 648
          <211> 1013
          <212> DNA
          <213> Homo sapiens

          <400> 648
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     ctgacccgcg ctctgcgctc tctgaacctg gcgcccccga ccgtcgccgc ccctgccccg   120
     agtctgttcc ccgccgccca gatgatgaac aatggcctcc tccaacagcc ctctgccttg   180
     atgttgctcc cctgccgccc agttcttact tctgtggccc ttaatgccaa ctttgtgtcc   240
     tggaagagtc gtaccaagta caccattaca ccagtgaaga tgaggaagtc tggggggcga   300
     gaccacacag gccgaatccg ggtgcatggt attggcgggg gccacaagca acgttatcga   360
     atgattgact ttctgcgttt ccggcctgag gagaccaagt caggaccctt tgaggagaag   420
     gttatccaag tccgctatga tccctgtagg tcagcagaca tagctctggt tgctggggggc   480
     agccggaaac gctggatcat cgccacagaa aacatgcagg ctggagatac aatcttgaac   540
     tctaaccaca taggccgaat ggcagttgct gctcgggaag gggatgcgca tcctcttggg   600
     gctctgcctg tggggaccct catcaacaac gtggaaagtg agccaggccg gggtgcccaa   660
     tatatccgag ctgcagggac gtgtggtgtg ctactgcgga aggtgaatgg cacagccatt   720
     atccagctgc cctctaagag gcagatgcag gtgctggaaa cgtgcgtagc aacagtaggc   780
     cgagtatcca acgttgatca taacaaacgg gtcattggca aggcaggtcg caaccgctgg   840
     ctgggcaaga ggcctaacag tgggcggtgg caccgcaagg ggggctgggc tggccgaaag   900
     attcggccac tacccccct gaagagttac gtgaagctgc cttctgcttc tgcccaaagc   960
     tgatatccct gtactctaat aaaatgcccc cccccccgt tttaaaaaaa aaa   1013

          <210> 649
          <211> 1504
          <212> DNA
          <213> Homo sapiens

          <400> 649
     ttcggcacga agcgtgtctc ggggtggacg atgttatttg aaaagttaca ggacagattt   60
     tctgtgttaa tggacatgag ccatacattg agagggctgc tggctactga aagaaatata   120
     aaattttaaa atttctgaaa tcatgcagtt aacatctgca cacttcacta tattttaagt   180
     ttttgttaat ataaagaat aagaaaacag aaaagtatta ctgttaaaca ataatagaga   240
     aatgtatact ttatttataa atttctccct ctagctgatc atacagttga ccagttcagg   300
     gtgcccgctg ctggttggat gccaggcgga atgtcagggt gttctctggt gtctgttgtg   360
     gctgtgggat ccacggttac tgggcggagc cctgtggtgg ctgtggtgcc atggaggggc   420
     tgcgatcttc tgtggagctg gaccctgagc tgactccagg gaagctggat gaggagatgg   480
     tggggctgcc accccatgac gcgagtcctc aagtcacttt ccacagcctc gatgggaaga   540
     cagtggtgtg tccacacttc atgggcttac tgctgggtct cttactttta ttgactttgt   600
     ctgttaggaa ccaactctgt gtaagaggtg aaaggcagct tgcagaaaca ctgcattcac   660
     aggtgaagga gaaatcccag ctcattggca agaaaacaga ttgtagagac tgaggcatct   720
     ttaaaagatg tcagggtaca gaaaaagtct ttcaacaccc ccggctttgt agatgcctac   780
     aagaaggtga atagcaccaa cgagatgctg atggagaaat ttaccaccct cgttcaagaa   840
     ctgaaagaag agacatcctc cagactctcc aggcaacaag aggagctggt agagatgcta   900
     acaacgctgg aggccctggg agaggccatg agagccaccc cgtcacaagg agctttttcca   960

                                     364

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gatttatgta ttaatctcct aagtgaacaa tttatatttt atcctctaca taattatcgt   1440
attatgcttt aaatatatat ttagtttatc aataaagaca ttcagtactc aatagcaaaa   1500
aaaa                                                                 1504
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<210> 650
<211> 2231
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(2231)
<223> n = a,t,c or g

<400> 650
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cagtcttggg cgaggtggcg tggatgagct ggtgaaagag gatgctgccc acatccaaag  180
gctccagagg atcctgggcc tgggcagctg agctcccctg catttgggaa cctcaggcgt   240
aacttgggtg tagagctcat gaaaggtgct tgtgtttctc cagctttttt tcaccagtgc   300
cttaccagac tgggctcagg ttttgggaat tctaagggtg agctggctag gaaacaggga   360
gagggtagga aagaagcccc tggggatgcc ttcccagaat tcatttgatg gggatccctg   420
gcataactgc ttgggaacac agaaagaggc tgtgacacag ctgagctttt ggagcatttt   480
aaggagctcc agctccagca aaacaaactc ttgcatttca gcccagaaag agcctcttgt   540
aacaaagtat tccaagggg agagtttctg catctttac tttgcagtcc actatggtag    600
aaaacttgac attccataga taatgatact gggttttctt tccaagatgc cagctttaaa   660
agaaatatga gccattctaa gctttaagaa gggttcagga aacacaggaa ttagtagaca   720
gccctcccaa tgcaggttaa gacgacagcc tgcgccccca actagcacag ctcagcgagc   780
atgaccatat gccattctcg tctccagaga gctggtggca gtgacctcac taggagaaaa   840
cacatccctc agccgtggga cttgacagaa tgaggtgcgc gagggaggcc gctagccgag   900
acttggcctt tcctgactgc ccctgtgtta cctgggcagc tccagatcac tgagcccaca   960
atggctgaga agggtgactg catcgccagt gtctatgggt atgacctcgg tgggcgcttt   1020
gttgacttcc aaccccctggg cttcggtgtc aatggtttgg tgctgtcggc cgtggacagc   1080
cgggcctgcc ggaaggtcgc tgtgaagaag attgccctga gcgatgcccg cagcatgaag   1140
cacgcgctcc gagagatcaa gatcattcgg cgcctggacc acgacaacat cgtcaaagtg   1200
tacgaggtgc tcggtcccaa gggcactgac ctgcagggtg agctgttcaa gttcagcgtg   1260
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gacctcgtgc tcaagattgg ggatttcggg ttggcaagga tcgttgatca gcattactcc   1500
caacaagggt tatctgtcag aagggttggt aacaaagtgg taccgttccc cacgactgct   1560
cctttccccc aataactaca ccaaagccat cgacatgtgg gccgccggct gcatcctggc   1620
tgagatgctt acggggagaa tgctctttgc tggggcccat gagctggagc agatgcaact   1680
catcctggag accatccctg taatccggga ggaagacaag gacgagctgc tcaggtgat   1740
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agtgaacagt gaagccatcg actttctgga gaagatcctg accttaacc ccatggatcg   1860
cctaacagct gagatggggc tgcaacaccc ctacatgagc ccatactcgt gccctgagga   1920
cgagcccacc tcacaacacc ccttccgcat tgaggatgag atcgacgaca tcgtgctgat   1980
ggccgctaac cagagccagc tgtccaactg ggacacgtgc agttccaggt accctgtgag   2040
```

```
cctgtcgtcg gacctggagt ggcggcctga ccggtgccag gacgccagcg aggtacagcg      2100
cgacccgcgc gcgggttcgg cgccactggc tgagaacgtg caggtggacc cgcgcaagga      2160
ctcgcacagc agctccgcct cgtgccaagc tggtcgtaat ggtgtcagtc ggtatcagtn      2220
tnntctcccc t                                                          2231
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        <210> 651
        <211> 2458
        <212> DNA
        <213> Homo sapiens
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        <400> 651
        atgaggacac ttgggacttg cctggcgact ttggccggac ttttgctaac tgcggcgggc      60
        gagacgttct caggtggctg cctctttgat gagccgtata gcacatgtgg atatagtcaa      120
        tctgaaggtg atgacttcaa ttgggagcaa gtgaacacct tgactaaacc gacttctgat      180
        ccatggatgc catcaggttc tttcatgctg gtgaatgcct ctgggagacc tgaggggcag      240
        agagcccacc tgctcttacc ccaacttaaa gaaaatgaca cccactgcat cgattttcac      300
        tattttgtgt ccagcaagag taattctcct ccggggttac tcaatgtcta cgtgaaggtc      360
        aataacgggc cactggggaa tcctatctgg aatatatctg gagacccaac acgtacatgg      420
        aacagggcag aactggccat tagtactttc tggcctaact tttatcaggt gatttttgaa      480
        gtgataactt ctggacatca aggctatctc gctatcgatg aggtgaaggt gttaggacat      540
        ccatgtacca ggactcctca cttcctgcgg attcagaatg tggaagttaa tgctggccag      600
        tttgctacct tccagtgcag tgccatcggc aggaccgtgg caggagacag gctctggtta      660
        cagggcattg atgtgcgaga tgctcctctg aaggaaatca aggtgaccag ctcccgacgc      720
        ttcattgctt catttaatgt tgtgaatacc accaaacgag atgctggaaa gtaccgctgc      780
        atgattccgc actgaaggag gtgttggaat atcaaactat gcagagttgg gtagttaaag      840
        aaccacccgt tcctattgcc ccacctcagc tcgcctctgt aggagccacc tacctgtgga      900
        tacagctcaa cgccaactcc atcaatgggg atgggcccat tgtggcccga gaggtggagt      960
        actgcacggc cagtgggagc tggaatgacc ggcagccagt cgattccacg agctataaaa      1020
        ttggacacct tgacccagat acagaatatg agattagtgt gctcctgacc aggccagggg      1080
        agggtggcac tggctctcct ggtccagctc tcaggacaag aacaaagtgt gctgatccca      1140
        tgcgaggccc aagaaaacta gaagtagtgg aggtcaaatc tcggcaaatc actatccgct      1200
        gggagccatt tggatataat gtaactcgtt gccacagtta taatctcact gtccactact      1260
        gttaccaagt tggaggacaa gaacaagtgc gagaagaagt aagctggat acagaaaatt      1320
        cacaccctca acacacgatc actaacctgt caccatacac caatgtcagt gtgaaactga      1380
        tcctcatgaa cccagagggc cggaaggaaa gccaagaact catagtgcag acagatgaag      1440
        acctcccagg tgctgttccc actgaatcca tacaaggaag tacctttgaa gagaagatat      1500
        ttcttcagtg gagagaacca actcaaacat atggtgtaat cactttatat gagatcacct      1560
        acaaagcagt cagttccttt gacccagaaa tagatttatc caatcagagt ggaagagttt      1620
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        cctttaccat ccgagctagc acagctaagg gttttgggcc tccagcaaca aaccagttca      1740
        ccaccaaaat atcagcaccc tctatgccag cttatgaact tgagacacct ttgaatcaaa      1800
        ctgacaatac cgtgacagtc atgctgaaac ctgcccacag cagaggagca cctgtcagtg      1860
        tctatcaaat agttgttgag gaagaacgtc ctcgaagaac taaaaagacg acagaaatct      1920
        taaagtgcta cccagtgcca attcacttcc agaatgcttc tctgctgaac tcacagtact      1980
        actttgctgc agaatttcct gcagcagcc tccaagctgc gcagcctttt acaattggtg      2040
        ataataagac atataatgga tactggaaca ctcccccttct ccctataaaa agctacagaa      2100
        tttatttcca agctgctagt agagccaatg gggaaaccaa aatagactgt gtccaagtgg      2160
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        cagttaaaat tgctggagtc atcgcgggca tcttgctgtt cgtgattata tttcttggag      2280
        ttgtgttggt aatgaagaaa aggctttaca agcatggtgc cagcatctgt tcagcttctg      2340
        gtgaggcctc aggaagcttc caatcatgga ggaaggcaaa gcacaagcag gcgtgtccca      2400
        tggcaagagc aggagcacga gagcgagcgg gagggtgtct caaactttga aacaacca      2458
```

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<210> 652
<211> 457
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(457)
<223> n = a,t,c or g
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<400> 652
aatagactgc gtaacctacg ccanngcgng gaattcgtca gcttctgcag ctctcccggg      60
ctagcatggc agcgcggaag agttggacgg ccctgcggct ctgcgccaca gttgttgtac     120
ttgatatggt cgtctgtaaa ggatttgtac aagatttaga tgaatcgttt aaagaaaatc     180
gaaatgatga catttggctt gtacattttt atgcgccatg gtgtggccat tgtaaaaagc     240
tggaaccaat ttggaatgaa gctggtcttg agatgaaaag cattggttct ccagttaagg     300
ctggaaagat ggatgctact tcctattcta gcattgcttc agagtttgga gttcgaggtt     360
atccaacaat taagctggct ctaattcggc cacttccaag tcaacaaatg tttgaacata     420
tgcacaagag acaccgcgta tttttcgttt atgtaag                             457
```

```
<210> 653
<211> 1014
<212> DNA
<213> Homo sapiens
```

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<400> 653
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acagtgttag caattatcac ccattcatca ggtattaatt catttcgatc ccaagggcat      120
aggcttgatg tacaataagg agttaaggac tgtgagttct ctgataaggt ttggttatag      180
tcatttctca cttctcaccc tctccaggac tacttccagc aacccagtct cctgccatgt      240
ccgaccccat cacgctgaac gtcgggggga agctctatac aacctcactg gcgaccctga      300
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acagccaggg caactgcttc attgaccgtg acggcaaagt gttccgctat atcctcaact      420
tcctgcggac ctcccacctt gacctgcctg aggacttcca ggagatgggg ctgctccgca      480
gggaggccga cttctaccag gtgcagcccc tgattgaggc cctgcaggag aaggaagtgg      540
agctctccaa ggccgagaag aatgccatgc tcaacatcac actgaaccag cgtgtgcaga      600
cggtccactt cactgtgcgc gaggcacccc agatctacag cctctcctct tccagcatgg      660
aggtcttcaa cgccaacatc ttcagcacct cctgcctctt cctcaagctc cttggctcta      720
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accacctgac tctggactgg gtggccaatg tggagggcct gccagaggag gagtacacca      840
agcagaacct caagaggctc tgggtggtgc ccgccaacaa gcagatcaac agcttccagg      900
tcttcgtgga agaggtactg aaaatcgctc tgagcgatgg cttctgcatc gattcttctc      960
acccacatgc tctggatttt atgaacaata agattattcg attaatacgg taca          1014
```

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<210> 654
<211> 1725
<212> DNA
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<213> Homo sapiens

<400> 654

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tcttcggccg gcgctgggcc atcgccagcg acgacttggt cttcccaggg ttcttcgagc     180
tggtcgtgcg agtgctgtgg tggattggca ttctgacgtt gtatctcatg cacagaggaa     240
agctggactg tgctggtgga gccttgctca gcagttactt gatcgtcctc atgattctcc     300
tggcagttgt catatgtact gtgtcagcca tcatgtgtgt cagcatgaga ggaacgattt     360
gtaaccctgg accgcggaag tctatgtcta agctgcttta catccgcctg gcgctgtttt     420
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acaggacagt tgtaaacggc atcatcgcaa ccgtcgtggt cagttggatc atcatcgctg     540
ccacagtggt ttccattatc attgtctttg accctcttgg ggggaaaatg gctccatatt     600
cctctgccgg ccccagccac ctggatagtc atgattcaag ccagttactt aatggcctca     660
agacagcagc tacaagcgtg tgggaaacca gaatcaagct cttgtgctgt tgcattggga     720
aagacgacca tactcgggtt gctttttcga gtacggcaga gcttttctca acctactttt     780
cagacacaga tctggtgccc agcgacattg cggcgggcct cgccctgctt catcagcaac     840
aggacaatat caggaacaac caagagcctg cccaggtggt ctgccatgcc ccagggagct     900
cccaggaagc tgatctggat gcagaattaa aaaactgcca tcattacatg cagtttgcag     960
cagcggccta tgggtggccc ctctacatct acagaaaccc cctcacgggg ctgtgcagga    1020
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gcttcaactg tcacttcggc tcccatcctg cacacccaca gggctgcagt acagggactt    1140
catccacgtc agcttccatg gacaaggttt acggagctgc cgttttagt ggctctggat    1200
cacaggaaag agtctgttgt ggtcgctgtg aggggggacca tgtctctgca ggatgtcctt    1260
acggacctgt cagcggagag tgaggtgcta gacgtggagt gtgaggtgca ggaccgcctg    1320
gcacacaagg gtatttctca agctgccaga tacgtttacc aacgactcat caacgacggg    1380
attttgagcc aagccttcag cattgctcct gagtaccggc tggtcatagt gggccacagc    1440
ctcgggggag gggcggccgc cctgctggcc accatggtca gagccgccta cccgcaggtc    1500
aggtgctacg ccttctcccc accccggggg ctgtggagca aagctctgca ggaatattct    1560
cagagcttca tcgtgtcact cgtcctgggg aaggatgtga ttcccaggct cagtgtgacc    1620
aacttggaag atcttgaaga gaagaatctt gcgagtggtc gcgcactgca ataaacccaa    1680
gtacaagatc ttgctgcacg gtttgtggta cgaactgttt ggagg                   1725
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<210> 655
<211> 748
<212> DNA
<213> Homo sapiens

<400> 655

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tttcgtgcgg cgactgcagc agcgaagggg aatgggggcg gcggtggcag ggccgggggc      60
ggggacgcca gcggcacgcg gaagaagaag ggcccggggc ccctggccac ggcgtacctg     120
gtcatctaca atgtggtgat gacagccggg tggctggtta tagcggttgg tctggtccga     180
gcatacctgg ctaagggtag ctaccatagc ctttattatt caattgaaaa gcctttgaaa     240
ttctttcaaa ctggagcctt attggagatt ttacattgtg ctataggaat tgttccatct     300
tctgttgtcc tgacttcttt ccaggtgatg tcaagagttt ttctaatatg ggcagtaaca     360
catagcgtca aagaggtaca gagtgaagac agtgtccttg tttgttattg catggacgat     420
cacggaaatc atccgttact cctttttatac attcagtcta ttaaaccatc tgccttacct     480
catcaaaagg gccaggtaca cacttttcat tgtgctgtac ccaatgggag tgtcaggaga     540
actgctcaca atatatgcag ctctgccctt tgtcagacaa gctggcctat attccatcag     600
tttacccaac tctacaaaaa aaattttttt aattagccag gtatggtggc atatgcttgc     660
agtctcagct gacgctaagg cggcagaaat gcctgctgta cttaagcctg gccatagag     720
aaggaccttg tctctaaata aataaaata                                      748
```

<210> 656
<211> 977
<212> DNA
<213> Homo sapiens

<400> 656
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cggccgcgtc gacagacaga cgggagcagt gcttttccta gagtagagta tgctctataa        60
atgtctactg aatgttgact ggtgttggat gtcttgtctc ctcagaatct ctgagctgcg       120
tgcagtgtaa ttcatgggaa aaatcctgtg tcaacagcat tgcctctgaa tgtccctcac       180
atgccaacac cagctgtatc agctcctcag ccagctcctc tctagagaca ccagtcagat       240
tataccagaa tatgttctgc tcagcggaga actgcagtga ggagacacac attacagcct       300
tcactgtcca cgtgtctgct gaagaacact ttcattttgt aagccagtgc tgcgaaggaa       360
aggaatgcag caacaccagc gatgccctgg accctcccct gaagaacgtg tccagcaacg       420
cagagtgccc tgcttgttat gaatctaatg gaacttcctg tcgtgggaag ccctggaaat       480
gctatgaaga agaacagtgt gtctttctag ttgcagaact taagaatgac attgagtcta       540
agagtctcgt gctgaaaggc tgttccaacg tcagtaacgc cacctgtcag ttcctgtctg       600
gtgaaaacaa gactcttgga ggagtcatct ttcgaaagtt tgagtgtgca aatgtaaaca       660
gcttaacccc cacgtctgca ccaaccactt cccacaacgt gggctccaaa gcttccctct       720
acctcttggc ccttgccagc ctccttcttc ggggactgct gccctgaggt cctggggctg       780
cactttgccc agcaccccat ttctgcttct ctgaggtcca gtagcactcc ctgcggtgct       840
gacaccctct ttccctgctc tgccccgttt aactgcccag taagtgggag tcacaggtct       900
ccaggcaatg ccgacagctg ccttgttctt cattattaaa gcactggttc attcactgcc       960
caaaaaaaaa aaacatt                                                      977
```


<210> 657
<211> 746
<212> DNA
<213> Homo sapiens

<400> 657
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tttcgtggcg gaacggagga ggaggcggtg gtgtcccggc tgcggggtag gagtccgcgg        60
cagcctccgg gtaagccaag cgccgcgcag tgctgagttc ccgcacgccg cagagccatg       120
gagatcggca ccgagatcag ccgcaagatc cggagtgcca ttaaggggaa attacaagaa       180
ttaggagctt atgttgatga agaacttcct gattacatta tggtgatggt ggccaacaag       240
aaaagtcagg accaaatgac agaggatctg tccctgtttc tagggaacaa cacaattcga       300
ttcaccgtat ggcttcatgg tgtattagat aaacttcgct ctgttacaac tgaaccctct       360
agtctgaagt cttctgatac caacatcttt gatagtaacg tgccttcaaa caagagcaat       420
ttcagtcggg gagatgagag gaggcatgaa gctgcagtgc caccacttgg ccattcctag       480
cgcgagacct gaaaaaagag attccagagt ttctacaagt tcgcaggagt caaaaaccac       540
aaatgtcaga cagacttacg atgatggagc tgcaacccga ctaatgtcaa cagtgaacct       600
ttgagggagc cagcaccctc tgaagatgtg attgatatta gccagaacc agatgatctc       660
attgacgaag acctcaactt tgtgcaggag aaacccttat ctcagaaaaa acctacagtg       720
acacttacat atggttcttc tcgccc                                           746
```

<210> 658
<211> 559
<212> DNA
<213> Homo sapiens

<400> 658
cctccctgct gtgggctggc ctgggaggaa gggggtgggg tgcacttaca tttgcaggtc   60
tttccagccc ctggggcagc ctgattaacc agcttctcca gggccaagct gttggggggtg   120
aggtgcagcc cgaagcagcc agaccagccc ctgagcctcc cgggtgctgg cagctgtcat   180
ggggctaccc tgggggcagc ctcacctagg gctgcagatg ctcctcctgg cgttgaactg   240
tctccggccc agcctgagcc tggagctggt gccctacaca ccacagataa cagcttggga   300
cctggaaggg aaggtcacag ccaccacctt ctccctggag cagccgcgct gtgtcttcga   360
tgggcttgcc agcgccagcg ataccgtctg gctcgtggtg gccttcagca atgcctccag   420
gggcttccag aacccggaga cactggctga cattccggcc tccccacagc tgctgaccga   480
tggccactac atgacgctgc ccctgtctcc ggaccagctg ccctgtggcg accccatggc   540
gggcagcgga agcgccccca   559

<210> 659
<211> 538
<212> DNA
<213> Homo sapiens

<400> 659
ctgggaagga cttggggggac tagaggcgag gggagagagc ttgtggaagg tgcggcagag   60
aagggcccag gagaaaggag gaagggaagg agctggaggg gcgggagaac aggagacaga   120
acaggacaga gacagctgcc cgggaggatg ggagaacaga aagagggagg aaacgccgag   180
cactgacctg ggggagggga gtaaagagaa gtgaaggggg attggaaggg aactggagaa   240
tgagagaagc aacaggcggg gtgcgtgtag gagggcggga gagccaatga caagacagaa   300
aaggcagaga aagcaaagca agaccagact cctcatccgg taacactgtg tcaggtcatt   360
gccctcccac cccgcccccca accccataac tgaaaacaag taggaacctg gataaaatag   420
tcttaacaat ttttttttg agacggagtc ttgctgtgtt gcccaggctg gagtgcagtg   480
gcgcgatctc ggctcactgc aggctccgcc tcccgggttt aagcggttct cctgccta   538

<210> 660
<211> 735
<212> DNA
<213> Homo sapiens

<400> 660
acgatttcgt ccggcccccgg cgccccagcc cctggccaag cctctgctgt cattttttct   60
ccctcctctc agtctgcagc tgcgggacgg gccgggctcc tcagtttctg ctgtgttgtg   120
accccacgag gcgctcagca cccaggaaag gcgcgtgtgt ccccgatgct ggctcctccc   180
tgagccccga cggctctcga ggttctgagc ctgtggcctg cacagggaac ttcctctccg   240

```
actgcattta tgcctctgtg gatgtgaagg ctatttctag aaatctcttc ctttgcagaa      300
acacccgaaa ccctcctgcc aggaagacca gggcctggga agagggtcgc tctccggcca      360
ttctcccctc accctcctca ccttcctcac atcctgtgcc ctggggggacc agcagctgct     420
tccacccaga acaagcggga gcctgtgtca ggaaagcatg tcagagcaga gctgccagat      480
gtccgaactg cggctcctcc tcctgggaaa atgccgctcg ggaaaaagtg ccacaggaaa      540
tgccattctg ggcaaacatg tgttcaagtc caagttcagt gatcagacag tgatcaaaat      600
gtgccagaga gagagttggg tcctgagaga aaggaaggtt gtggtaattg acacccctga      660
ccttttctcc tcaatagctt gtgctgaaga caagcaacgc aacatccaac acttgttgga      720
gctctctgct cccag                                                      735
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<210> 661
<211> 978
<212> DNA
<213> Homo sapiens

<400> 661

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tttcgtggag acgactgtga gcgtgcaaag cgcagagtcc tctgatgccc tgagctggtc      60
caggctgccc agggccctgg cctccgtagg ccctgaggag gcccgaagtg gggccccccgt    120
gggcggggggg cgttggcagc tctccgacag agtggaggga gggtccccaa cgctgggctt     180
gcttgggggc agcccctcag cacagccggg gaccgggaat gtggaggcgg gaattccttc      240
tggcagaatg ctggagcctt tgccctgttg ggacgctgcg aaagatctga aagaacctca      300
gtgccctcct ggggacaggg tgggtgtgca gcctgggaac tccagggttt ggcagggcac      360
catggagaaa gccggtttgg cttggacgcg tggcacaggg gtgcaatcag aggggacttg      420
ggaaagccag cggcaggaca gtgatgccct cccaagtccg gagctgctac cccaagatca      480
ggacaagcct ttcctgagga aggcctgcag ccccagcaac atacctgctg tcatcattac      540
agacatgggc acccaggagg atggggcctt ggaggagacg cagggaagcc ctcggggcaa      600
cctgcccctg aggaaactgt cctcttcctc ggcctcctcc acgggcttct cctcatccta      660
cgaagactca gaggaggaca tctccagtga ccctgagcgc accctggacc ccaactcagc      720
cttcctgcat accctggacc agcagaaacc tagagtggtg gagtctcgct ctgtcaccca      780
ggctggagtg cagtggcatg atatcggctc actgcaacct ctgcctcccg gattcaagca      840
attctcccgc ctcagccttc cgaatagctg ggactacagg cgcatgccac catgcccgga      900
taattttttgg atttttagta gagagggggat ttcaccatgt tggccaggat ggcctctatc    960
tcttgatctt gtgatacg                                                    978
```

<210> 662
<211> 1118
<212> DNA
<213> Homo sapiens

<400> 662

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catgaactcc cggccttaag tgacccacct gcctcggcct cccaaagtgc tgggactata      60
ggtgtgggcc actgcgcccg gccagtgtat tttaaaatta taaagccgat atattacaaa     120
gtaaaatgca ggggaaaaaa agtcacaaga agtataaaga ttggatgctt cttgtgcttc     180
ttttttgtaaa atacagatga tcctcaagaa gtaacttgag cagattttct actggctttc    240
aaattgataa ccctacaccc cctataaatt tttacattcc ttaacagagc taaccatagg     300
aacttccaaa taatttctca gtggaaatga gtcttcaaaa tcacacatgg ctcataagag     360
ttttgctttt ttaatgcctt ctcaaaggac ccagactgct agattttcat aataactact     420
ttaaccagat agacttacta tagggtggta gttccccact aaaagatact tttctcttgc     480
```

```
ttagtagtca ccttcctgtg ttctagagct tccctatgct tttaaaatat gcattattac    540
aacagttctc ctaaaaacaa aaccccccata agagctgctg cactcggggga gccctgaatg    600
aattttaaag cagcgcctga gtcctgcatt ctttcttcat tgtccttttt gcttaatttg    660
cctgtggtgt accatcaacc ttacaatgga gacagagaga aagtactccc cctaacctat    720
ttaagaaaca tttgcaatat actgtttttt tttttacaa gtctttaatt aaaaaaactca    780
acaaaaatat ataattgagc attttacata atgcatacat tcttaatatc tgcaggtaag    840
ataaacaaca gaaggcaaaa gcagatatgc tgtattgctt ctttggcaac tcaccaatat    900
catcccctgc agaaacagag ttttttttttt tttttttttta aatccatggt cttaaaataa    960
ttgtcccttta gtataaacaa aatatttagc aataatacag tagacggatt cttcaaattc   1020
acaacaattt ataatacttt ataccacaag ggtaaactag taagctgctt tctaaaatta   1080
aggcagcagc agtgtttaga ggggggagtaa aaaaaaaa                           1118
```

<210> 663
<211> 556
<212> DNA
<213> Homo sapiens

<400> 663

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gaaatgccta ttttcatttc tgatcttact tacttgtgtt ttttctcttt ttaattattc     60
ttactagaag tttatcaatt ttattactct ttccaaagaa caagcttttg gctttgctaa    120
ttttctctat tatttacttg ttttaaaaaa tgtattggtt tctgctctta tctttattat    180
gttttttcttc tacttagtat taatttagtt tgttctttc ctagcctctt aaggtagaaa    240
cttagataat tgattttaag ccttccttta ctatatgggc acttgaaaag ctatacattt    300
ccctctgaac actaccttca tttgctacaa acatttgcta cattcaacaa atatttgaat    360
gtgtgtgttt taattttcat tcatcacaaa cccgtggtcc cagctattca ggggactaat    420
gtgggaggat cacttgagcc caggaggttg aggctgcagc aagccatgat tgtgccacta    480
catttttggcc tgggcaacag agtgagaccc tgtctcaaaa aacaacaaca acaacaacaa    540
caacaacaaa aaaaa                                                      556
```

<210> 664
<211> 373
<212> DNA
<213> Homo sapiens

<400> 664

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agaatggaga ccaaacctgt gataacctgt ctcaaaaccc tcctcatcat ctactccttc     60
gtcttctgga tcactggggt gatcctgctg gctgccggag tctggggcaa acttactctg    120
ggctcctata tctcccttat tgccgagaac tccacatatg ctccctatgt gctcatcgta    180
actggcacca ctatcgttgc ctatcctcta gtttgattct tcttctccta ttcttctggg    240
ttctcttaca ttctagccgt ccgcctcatt gctggaattg ctctcgtcta caactacatc    300
cctcgatctt catcgcgtgc gttagtccgt ctcgtcgtct tgcttcgttt cctcctctct    360
cgtcatcctt ccc                                                       373
```

<210> 665
```
```

```
        <211> 411
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(411)
        <223> n = a,t,c or g




        <400> 665
agaacgcaga acatccaggc atggatagac atgatctgtg tcagaaggcc aaactggccg      60
agcacgctga gcgagatgat gacatggcag cctgcatgaa gactgtaact gatcaaggag     120
ctgaattatc caatgaggag aggaatcttc tctcagatgc tcataccaat gctgtatgag     180
cccgtaggtc atcttggatg ggcgcatgac gtatcgaaca aaagaccgaa ggtgctgaca     240
cacagcagca gatggctcca gactgcagag agattttgc gacggagcta agagatatct      300
gcgatgatgt actgtctctt ttggaaaagc tcttgatccc caatgcttca catgcataga     360
gcttagtcta ctatttgcac atgatcggag attactaccg ttactggctt n              411




        <210> 666
        <211> 333
        <212> DNA
        <213> Homo sapiens




        <400> 666
tggcggcggt ccgctgggga agatgccgcg ggcgcagttg gcggacccgt ggcagatgat      60
ggctgtggag agcccgtccg actgcgctga caatggacag caaattatgg atgaacctat     120
gggagaggac gagattagcc cacaaactga ataagtcagt atcaaagaag ttgctgtcac     180
acattgtgta aaggaaggac atgataaggc agatccttcc cagattgaac ttttaagagt     240
cttacggcag ggatcattgg gaaaggtgta cttaggtaag aaagtctcag ctctgatgc      300
taagcagctg tatgccatga aggtattgac gag                                  333




        <210> 667
        <211> 1991
        <212> DNA
        <213> Homo sapiens




        <400> 667
agacgctgca ggaattcggc acgaggcgca tttcggcaag ttggagtgct tagtgcagtt      60
ggtgagagcg ggagctctca ctcttcgtct ccaccacacg gtacgcgcag acgccagcgc     120
cacattgcag cctttggggg acatcctcag tgcctggtct ggctgattca agcaggagcc     180
aacattaaca aaccggattg tgagggtgaa actcccattc acaaggcagc tcgctctggg     240
agcctagaat gcatcagtgc ccttgtggcg aatgggctc acgtcgataa ccccaagaaa      300
ggcatcaggg ttctggagtg gttgtttgag tgacacagca caaggccttg atttcatcat     360
gcttttgctg tggatgtagt gtagcttgct gaacaggtat ggaagctgtc tttgctgtta     420
```

```
agtacttctc ccgtttgttt atcaacctgc agctaacagg atgtctgctt ttttacaggt    480
ttatttcaca gagcagtgta cattcttgtc ttccagggga acttcaacat ggagttactt    540
ttgatccctc agttttaatt cagtgtctaa aggtttacaa gttcaactta ctctatttta    600
ttcagctctt tcacttactc tgccatcact tcctacttga atctgagttt tagctactgt    660
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gtggtaggga tgagttttta ggacagtatt caaagccttt ttaaaggaac caactactca    780
aatgctctac aatgccaaaa atacaatact cctgcaggtt ttcccaagca aggccaaaac    840
aatcaaaatc tgacagaaaa acacagctgt tcagctctgg aatctgatga taggctactt    900
tttaatgtca ggacatcctt ctaaacttcc acttacagtg tcacatgtaa gcatgaaggc    960
tggctcgttg gtgagccatt gctttgtttt taggaagaca gttatgaatg ccatggacaa   1020
tctcagtaca tgttgtttgt tatgatttta ttcacgctaa aggaatgggt attaaaatta   1080
agtgcatata atatagaatt cagtttcaag tctgaagtta gcgtaaattt agattcttca   1140
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gcatatttag tttatctccc aaatcttgct tagaaatcaa atgtatataa gagaagttag   1260
ttacagagct agattgatta actacttctt taatgaagat ttgctatgaa tttgtttact   1320
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cggatggggt gtaattcagt gtttttgtgt tgtacagcct gagaaatgcc agtggcctga   1440
cagcagcaga cattgcacaa acccagggtt tccaagagtg tgcccagttt ctcttgaacc   1500
tccagaattg tcatctgaac catttctata acaatggcat cttaaatggg ggtcatcaga   1560
atgtatttcc taatcatatt agtgtgggaa caaatcgaaa gagatgcttg gaagactcag   1620
aagactttgg agtaaagaaa gctagaactg aaggtgagac cgctttgcgg gtgggaagag   1680
cacacttatt tttcctttct gtaatatgtt ttcttttttat ggctgagcgc accttcgaga   1740
tgagaccttc acttcaggtg gtaatgcgcc tggtggattg tgcggtgacg gtggagattt   1800
ctcctgtact gccactgcga agatgggact taacaaaagg gaatgtgagg gaaatactga   1860
tggcccaagt gtaaatgtct atgtggaact ttttgagcac ccatgtttac ctgccgtgaa   1920
ttagattttt taatttgttg tatctgtttg aaatatatct attaaaaaaa atctgccact   1980
gaaaaaaaaa a                                                        1991
```

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    <210> 668
    <211> 1156
    <212> DNA
    <213> Homo sapiens
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    <400> 668
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taaaaatcca ctaccaaaaa taaatatgag atatatgtgt atgactaata tgccagattt    120
actttggag acttgtctga gtattatgaa tttttgtaag aaattcctaa gaatctttct    180
aatcttagca gttttcatta atgaaatggt ttttgaagga tttagcagga aatacatata    240
actttgaaa cttatgttta tagctgaact tggtgactat gatcttgctg agcatagtcc    300
tgaacttgtc tcagagttca gattcgtgcc tattcagact gaagagatgg aactggctat    360
ttttgagaaa tggaaggaat acagaggtca aacaccagca caggctgaaa ccaattatct    420
gaataaagcc aaatggctag aaatgtatgg ggttgatatg catgtggtca aggctagaga    480
tgggaatgac tatagtttgg gactaacacc aacaggagtc cttgttttg aaggagatac    540
caaaattggc ttattttttt ggccgaagat aaccagattg gattttaaga agaataaatt    600
aaccttggtg gttgtagaag atgatgatca gggcaaagaa caggaacata catttgtctt    660
tagactggat catccaaaag catgcaaaca tttatggaaa tgtgctgtgg agcatcatgc    720
tttcttccgc cttcgaggcc ccgtccaaaa gagttctcat cgatcaggat ttattcgact    780
aggatcacga tttagatata gtgggaaaac agagtatcag accacaaaaa ccaataaagc    840
aagaagatca acatcctttg aaagaaggcc cagcaaacga tattctagac gaactctaca    900
aatgaaagca tgtgctacaa aacctgaaga acttagtgtt cacaataatg tttcgaccca    960
aagtaatggc tcccaacagg cttgggggat gagatctgct ctgcctgtga gtccttccat   1020
ttcctctgct cctgtgccag tggagataga gaatcttcca cagagtcctg gaacagacca   1080
gcatgacagg aaatggctct ctgctgccag cgactgctgt caacgtggtg gaaaccagtg   1140
gaacacaagg gccttg                                                   1156
```

```
<210> 669
<211> 539
<212> DNA
<213> Homo sapiens


<400> 669
aagaatccag atggtggcct tttggggggca ttaggatcct tcttcttgcc tcccttagct     60
ggtccataat ccttcatttc ccgatcatag cacacttcat ccgcctttgc catttcacca    120
aatttaaatt tctctttact ggacattgtc ttccacctcc cagagcattt cttggaaaat    180
tctgcaaaat tgacagggac ttctgggttt ttcttcttat gttcttctct gcattggaac    240
aggaattaaa agaaattaaa gaggccgggc gcagtggctc acgcctgtaa tcccagtaat    300
ttgggaggcc aaggcgggcg gatcacctga ggtccagagt tcaagaccag cctgaccaac    360
atggagaaac cctgtctcta ctaaaaatac aaaaaattag ccgggtgtgg tggtgcatgc    420
ctgtagtccc agctactccg gaggctgagg caggagaatg gcttgagcct gggaggcgga    480
ggttgctgtg agccgagatc gcacctttgc actctagcct gggcaacaag agcgagact    539
```

```
<210> 670
<211> 682
<212> DNA
<213> Homo sapiens


<400> 670
ctgggggtcc tggctgaact ggtctggtgt taaggggggcc ccctgacccc cttgaagggg     60
gggctgggct gggtgagggg gggtggccga cccccagcca ggttcccagg caggatgagc    120
tggggttggg gtggctaggc cgagggcctt gggagctggg cagtctgggc tgggctgggc    180
tgggcagggc gccacatgga agctggagga gcaacgggag cgctgggcgt ggggagcaaa    240
ttgcccagtg ccttctgttt cccaggcagc tctgtggcca tggatatgtt ccagaaggta    300
gagaagatcg gagagggcac ctatggggtg gtgtacaagg ccaagaacag ggagacaggg    360
cagctggtgg ccctgaagaa gatcagactg gatttgtgag tgctgggacg gcccctgagt    420
tacccaccct gggccatcac aacctgggcg ctccctgatc cgttccctct ttcctggagt    480
ccacgtttaa ctcctctggg tgctgcccag cagcccttac ctgtcctctc cccagttcac    540
tgccttctga ccagcctttg ccggggccct gactgtggag tttggtggat gacgtgccaa    600
ggagcacagg tctccattgc cggggccctg gtcattctgt ggggttaagg agaagccgat    660
ccccctggct ggaagtgccc tt                                              682
```

```
<210> 671
<211> 536
<212> DNA
<213> Homo sapiens


<400> 671
```

```
gcctgtgtgt ctctgtgctt tgctccttct cctacctcca aaatggctgg actgcctccg    60
atccagttca tggctactgg ttcaggggca ggggaccatg taagccggaa cattccagtg   120
gccacaaaca acccagttcg agcagtgcag gaggagactc gggaccgatt ccacctcctt   180
ggggacccac agaacaagga ttgtaccctg agcatcagag acaccagaga gagtgatgca   240
gggacatacg tcttttgtgt agagagagga aatatgaaat ggaattataa atatgaccag   300
ctctctgtga atgtgacagc gtcccaggac ctactgtcaa gatacaggct ggaggtgcca   360
gagtcggtga ctgtgcagga gggtctgtgt gtctctgtgc cctgcagtgt cctttacccc   420
cattacaact ggactgcctc tagccctgtt tatggatcct gggtcaagga aggggccgat   480
ataccatggg atattccagt ggccacaaac accccaagtg gaaaagtgca agagga        536
```

```
        <210> 672
        <211> 1038
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 672
tttcgtccct ggagctggcg aggtgtccgg ttgcggagcc ggcggcgtct ctggaaatgc    60
atcctgcatc ccgcatgga taacagctgc agctatgtca gaattgcaca aagagggag    120
agtgtcattg tgtgcctttt gacacataca ttaagaccaa aaaggaaaaa aagcgtctat   180
ctgtgctgcc accgaccaga ctcatggagg ccagatttc tccaattaac cagatcttgc    240
cctggtgcag acaagactta gccatcagca tcagcaaagc catcaacacc caggaggccc   300
ccgtgaagga gaagcacgcc cggcgcatca ttctgggcac acaccacgag aaggggctt    360
tcaccttctg gtcctatgcc attgggctgc cgctgcccag cagctccatt ctcagctgga   420
agttctgcca cgtcctccac aaggtccttc gagacgggca ccccaatgtg ctgcatgact   480
gccagcggta ccgcagcaac atccgggaga ttggagacct gtggggacat ttgcatgacc   540
gctacggaca gctggtgaat gtctacacca agctgctgct gaccaagatc tccttccacc   600
tcaagcatcc ccagtttccc gcgggcctgg aggtgacaga tgaggtactg gagaaggcag   660
ctgggaccga tgtcaacaac atgtgagtca ctctgcatgg ctacatggcc agttccccctc   720
ggcttcccca ttccttccta ccgcgtctca cgcccaggcg tccgcatggg gcagtggggt   780
tgaatgagtc cgtggctttg ttggttgatg ctcacgctcc caggacagaa gggtgaagtt   840
aaaagggtgg ggtgtacttg aaggactgtc gtcctggcag aggcacgctg tctcaccaga   900
gccatggtgt cggcggtgcc cccgtcccca ctggagggggg cgtctcaaga cgagtgggtg   960
ggtccaccca cccttttca tttcttcccc cacttctctt gcgtagcttc cagctcactg  1020
tggagatgtt tgattacc                                                1038
```

```
        <210> 673
        <211> 676
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 673
tttcgtccgg gcggtcgcat tgttttcctc cgcggatccg cggctggact tggacccagg    60
gctctcccga cagcgccctg gaacccaaat tcaagcacca tccaattcgg acgctcatcg   120
catctcgcct gagcacaacc acggattgcg aactcagcgc agcgcgtggc cgctggccgc   180
ccgcggcgat ctcgatcccg ctgacccgaa tcctggagtc agaggtttcc tatccccctc   240
aagcccccac aggagtcacc aacccagggc cggcttatgg gtgagggggc accccctggg   300
gctgagctg ccccgcacag gatgcctcgt gccccccact tcatgccctt gctgctactg   360
ctgctgctgc tctcacttcc ccatactcag gccgcctttc cccaggaccc cctccctctg   420
```

```
ttgatctctg accttcaagg tacttcccca ttatcctggc ttccgagcct ggaggatgat    480
gctgtggctg cataacttgg gctggacttt cagagattcc tgaccttgaa ccggaccttg    540
ctagtggctg cccgggatca cgttttctcc ttcgatcttc aagccgaaga agaagggggag   600
gggctggtgc ccaacaagta tctaacatgg agaagccaag atgtggagaa ctgtgctgta    660
cggtgaaagc tgacgg                                                     676
```

```
          <210> 674
          <211> 418
          <212> DNA
          <213> Homo sapiens
```

```
          <400> 674
tctcttcata cagacacacg tgacatttgg tgccaaagac ccggggggagg gggactcctt     60
cgggagacca gtcccctgtc ctcaccctca ctccatgagg agatccacct accatcttgg    120
gtcctcagac caaccagccc aaggaacatc tcaccaattt caaatcaggt aagcggtctt    180
ttcactctct tctccaacct ctcttgctgt tgctccaccc ttcaatctct cccttcctta    240
attttggttc ctttcccttt ctggtagaga cagaagagac gtgtttatc cataaactca    300
aaactccagc gctggtcact ccagacagtc ttccgttggt gtttaatcac tgtggggatg    360
cctgcctgat tattcaccca catttcaggg atgtcgaatt ccaccacacg ggtaatac     418
```

```
          <210> 675
          <211> 1423
          <212> DNA
          <213> Homo sapiens
```

```
          <400> 675
tgctgttcaa caaaaaacat atcaggggac aaagcatgta acttgatgat cttcgacact     60
cgaaaaacag ctagacaacc caactgctac ctatttttct gtcccaacga ggaagcctgt    120
ccattgaaac cagcaaaagg acttatgagt tacaggataa ttacagattt tccatctttg    180
accagaaatt tgccaagcca agagttaccc caggaagatt ctctcttaca tggccaattt    240
tcacaagcag tcactcccct agcccatcat cacacagatt attcaaagcc caccgatatc    300
tcatggagag acacactttc tcagaagttt ggatcctcag atcacttgga gaaactattt    360
aagatggatg aagcaagtgc ccagctcctt gcttataagg aaaaaggcca ttctcagagt    420
tcacaatttt cctctgatca agaaatagct catctgctgc ctgaaaatgt gagtgcgctc    480
ccagctacgg tggcagttgc ttctccacat accacctcgg ctactccaaa gcccgccacc    540
cttcttaccc accaatgctt cagtgacacc ttctgggact cccagccac agctggccca    600
ccacagctcc acctgtaacc actgtcactt ctcagcctcc cacgaccctc atttctacag    660
tttttacacg ggctgcggct acactccaag caatggctac aacagcagtt ctgactacca    720
cctttcaggc acctacggac tcaaaaggca gcttagaaac cataccgttt acagaaatct    780
ccaacctaac tttgaacaca gggaatgtgt ataaccctac tgcactttct atgtcaaatg    840
tggagtcttc cactatgaat aaaaactgct cctgggaagg tagggaggcc agtccaggca    900
gttcctccca gggcagtgtt ccagaaaatc agtacggcct tccatttgaa aaatggcttc    960
ttatcgggtc cctgctcttt ggtgtcctgt tcctggtgat aggcctcgtc ctcctgggta   1020
gaatcctctc ggaatcactc cgcaggaaac gttactcaag actggattat ttgatcaatg   1080
ggatctatgt ggacatctaa ggatggaact cggtgtctct taattcattt agtaaccaga   1140
agcccaaatg caatgagttt ctgctgactt gctagtctta ggaggttgta ttttgaagac   1200
aggaaaatgc cccttctgc tttcctttt tttttttgaa acagagtctt gttttgttgc    1260
ccaggctgga gggcagaacc acaatttggg ttttaaccga accctccgtt cttgggtta    1320
```

```
aagcaattct cctgcctcac cctcctaaga atctggaatt acgggcatgg gccaccaccc    1380
cggggggatt tttggatttt tagtaaagac ggggtttcac cat                      1423
```

```
        <210> 676
        <211> 621
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 676
cggggaggta ccaggtattt gagagcaatc gccaccgctt tcctggaact tgaggctgga     60
gtgcagcggt gtgatctcgg tttactgcaa cctccacctc ctgagttcca gcgattctcc    120
tgcctcagcc tcctgagtag ctgggattac agtaaataca atcaaggggc atcttaaatt    180
tttgctggaa gtggagtcat gagactaaag atatctcttt taaaagaacc aaagcatcaa    240
gaattagtaa gctgtgtggg ctggactact gctgaagagc tgtattcatg tagtgatgat    300
caccacatag tgaagtggaa cttgttaacc agtgaaacaa ctcaaatagt aaagcttcct    360
gatgatattt accctattga tttttcactgg tttccaaaaa gtttgggtgt aaagaaacaa    420
acccatgcag aaagctttgt cctcacaagt tctgatggta aatttcatct gatttccaag    480
ttaggaagag tggaaaaaag tgtagaagct cactgtggag cagtacttgc aggaagatgg    540
aattatgaag gaacagcatt agttacagtt ggagaagatg gacaaatata aatttggtca    600
aagactggga tgcttatatc t                                               621
```

```
        <210> 677
        <211> 1258
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 677
cccgggtcga cgatttcgtg cggcgggcta tccggtcctc ggctgcggcg ggcaccatgg     60
tcggtggcga ggcggctgcc gcagtggagg agctggtttc gggggtgcgg caggcggccg    120
acttcgcgga gcagttccgc tcctactcag agagcgagaa gcaatggaag gcccgcatgg    180
aattcatcct gcgccacctg cccgactacc gcgacccgcc cgacggcagt ggccgcctgg    240
accagctgct ctccctctcc atggtctggg ccaaccatct cttcctaggc tgcagttaca    300
ataaagacct tttagacaag gtgatggaaa tggccgatgg gattgaagtg gaagacctgc    360
cacaatttac taccagaagt gaattaatga aaaagcatca aagctaagcc agaagattta    420
tcacattttc atcatcagct acaggattag aaaggaggct gggatgaatg tgacatagac    480
cacagcagct ctcttaagac tcctggtatt accaacataa agaggcaggt ggaatgagaa    540
ggactctgtc tagattggct tttttaacat tctcattttc ccaggagtta tcactgtaaa    600
agtatgcatg gatatttatg tatttataaa tcatgcactc taagatgagt tcatcaacat    660
tgtaaaagcc ctcttttctg ttttcaggtt ttttttttc ttatcgacaa ggtctcactc    720
tgtcgcccag gcagaagcac aaaggtgcag tattggctca ttgcagcctc gaactcctgg    780
gctcatattt tcagggtttt ttgtttttg ttttgttttt ttgagacaga gtcttgctct    840
gttgcccagg cagtagtgca gtggcgcgat atattttcag tttttaaacg tcagaatttt    900
tgtttaaaat gccttttgg gctgggcaca gtggcttatg cccataataa tcccagcact    960
ttgggaggcc gaggtgagca gatcacctga ggttaggagt ttgagaccag cctggccaac   1020
acgatgaaac cccgtctcta ctaaaaatac aaacaaatt agctgggcat ggtggcggac   1080
atctgtaatc ccagctactc aggaggctga agcagaagaa ctgcttgaac ctgggaggtg   1140
gaggttgcag tgagccaaga tcgcaccatt gcactccatc ctgggcgaca aaaatgaaac   1200
accgtctcaa aaaaaataaa aataataaaa taaatgcct ttttgttgtt gctcgtgc     1258
```

```
<210> 678
<211> 1289
<212> DNA
<213> Homo sapiens

<220>  .
<221> misc_feature
<222> (1)...(1289)
<223> n = a,t,c or g
```

```
<400> 678
cgccaccggt atgcaccatt accatccccg cggctcagtc gagcattcgt ccacgggccg      60
gagggcgggg cgcccgggtc cggagggagc cacgcccnac cacaacaaac gcgtctgcgc     120
atgcccgggc gctgggttca ggggctttcc gccgctctgg gttcacagct ggacgtcggg     180
agtgctagtt tggagtacgc catttgagag taggcgtgag aagttgctct gtgtgctgag     240
cgttctaaag gaaggcgtcc gttggccttc gtacccgtct tgagtgaggt gacgagtgtt     300
ttctagtact ggggtcggcc gcgcagccct ctcaggggtg ggtggcagga agagtgccgg     360
gtcccgcgtg gtgcaaaagg tgggttcagg tttgcggcca cacagcgcta ctcaggactt     420
tttagtcttg tttatttttct ccgtgcctgt tcccgccccc cgcagctcca cctctgggag     480
aggggcgggt tcagctccag gaggcgggga cttcccggct tggcgtggct ggggtgtccc     540
gtggacccca gtctcggcgc ggtgacccac ttatgggact tggcctttct ttgttgtttg     600
tttaaggcag ggtttctcag cctgggcact actgaggttt tgggccggct aattctgtct     660
gggttgggga gggtgctgtc ccgtgcttcg caggttgtgt agctgcatcc cccgcctcta     720
cccagtggat gcaagtagca gccccagtga accaaaaatg cccccagact ttgccaaata     780
tccctccccg gggaagatcg cctcgcttga gaaccactgt tggaggagag cctgggtttt     840
cgggaggtaa ccgtttacaa aggggagaac ggtaagaagc cggaagcaac gatgacttag     900
ctacgtgaaa gacttgcggc cgggctcgcc cctcttctag aagccgtcag tttgggtctc     960
gcgtctggaa tcaccgtcaa ggagtcagat ccagccccgg agagggagca gggtcgaggt    1020
ctccttgcag aaggcgccac cgcaggaagc acaggcgcaa cgtgcagtct ccctagcgga    1080
ggcgctcgcg atcctgcagc cgccggtccg ggaggtgctc ggtagccctc cttggtgcct    1140
gtccggtagc tggtcactct cggggggaagg tcgtgtgcag aagggcacat gcgatcacac    1200
agagacggcg ttgctgcggc tttgacccga tggtgcaccc gaaagaacac agagggtgaa    1260
gggagagatc caggaagtgg tcgcggagc                                      1289
```

```
<210> 679
<211> 539
<212> DNA
<213> Homo sapiens
```

```
<400> 679
agtctcgctc ttgttgccca ggctagagtg caaaggtgcg atctcggctc acagcaacct      60
ccgcctccca ggctcaagcc attctcctgc ctcagcctcc ggagtagctg ggactacagg     120
catgcaccac cacacccggc taattttttg tattttagt agagacaggg tttctccatg     180
ttggtcaggc tggtcttgaa ctctggacct caggtgatcc gccgccttg gcctcccaaa     240
ttactgggat tacaggcgtg agccactgcg cccggcctct ttaatttctt ttaattcctg     300
ttccaatgca gagaagaaca taagaagaaa aacccagaag tccctgtcaa ttttgcagaa     360
ttttccaaga aatgctctgg gaggtggaag acaatgtcca gtaaagagaa atttaaattt     420
```

```
ggtgaaatgg caaaggcgga tgaagtgtgc tatgatcggg aaatgaagga ttatggacca     480
gctaagggag gcaagaagaa ggatcctaat gcccccaaaa ggccaccatc tggattctt      539
```

```
        <210> 680
        <211> 349
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 680
ttagaagtga gttaaatttt cacattccca agggtacttt tgtctcgggt tgttgaatat      60
attttaaagt gtttataata atcacttcaa aatatttagg taattaactg taaattatgt     120
tttggtattc tccagggaca gtggccttag agctattgag aatttgatgc aaaagaaggg     180
gaaatttgat tacatactgt tagagaccac tggattagca gaccctggta agaagtgaga     240
ttattaataa ccagaatata gttctgtgat atattgtaaa tagatgtatt agaggaatat     300
ctaaaatgag gattaaagct tttgttagta ttaaaccaaa aactttttt                 349
```

```
        <210> 681
        <211> 329
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 681
ggcacgaggc ggcgctgtgt cggacccgtg ctgtggctgc cgagaggcat tttctgcgag      60
tgtttctctt cttcaggccc tttcggggtg taggcactga gagtggatcc gaaagcggaa     120
gttccaaagc caaggagcct agaacgccct caagcagcta cgggaccgcc caataccgac     180
gctggccaat agcccaggag tataaacact gcaccgcgca caatgacaca ggcactctct     240
gctccgagct gagagaacca tggaggagac cgcagtagac agagccactg aactcatgac     300
aacgtgaagc gaactagaaa gtaatactc                                       329
```

```
        <210> 682
        <211> 574
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 682
acgagggctc cagtcaggcc aatacgctcc gctcacggaa ggaaaacaga aataacttgc      60
tggcttgtct ggagtcacat gtacttaggt gacaatttac agaaagtcat ctctgcagct     120
tgatgggcga caaccctttt caaccaaaaa gtaattcaaa aatggcagaa ctgtttatgg     180
aatgtgaaga agaggagctg gaaccatggc agaagaaagt aaaagaagtt gaggatgacg     240
atgatgatga gccaatcttt gttggcgaga tatcaagttc aaaaccagca atttcaaata     300
```

```
ttttgaacag agttaacccc agctcatatt caaggggact aaagaatggt gcactcagtc      360
gaggtattac tgctgcattc aagcctacaa gtcaacacta cacgaatcca acatcaaatc      420
cagtgcctgc ctcaccaata aattttcatc ctgagtctag atcttcagat agttctgtta      480
ttggtcagcc tttttctaaa cctgtaagtg tttctaaaac tatacggcca gctcagggat      540
ccattggatg ttgtttatca atatcaacag tacc                                 574
```


        <210> 683
        <211> 627
        <212> DNA
        <213> Homo sapiens

        <400> 683
```
cttgatgttt ttcacttgaa gacattttga acttttctt acagggtttc tctgctgggc        60
tgtttgcatt ctaccatgat aaagatggaa atcctctcac ttcaagattt gcagatggcc      120
tcccaccttt taattatagt ctgggattat atcaatggag tgataaagta gttcgaaaag      180
tggagagatt atgggatgtt cgagataata agatagttcg tcacactgtg tatctcctgg      240
taacgcctcg tgttgttgag gaagcacgaa aacattttga ttgtccagtt ctagagggaa      300
tggaacttga aaatcaaggt ggtgtgggca ctgagctcaa ccattgggaa aaaaggttat      360
tagagaatga agcgatgact ggttctcaca ctcagaatcg agtactctct cgaatcactc      420
tggcattaat ggaggacact gggagacaga tgctgagccc ttactgtgac acgctcagaa      480
gtaacccact gcagctaact tgcagacagg accagagagc agttgccgtg gtgtaatttg      540
cagaagttcc ctaagccttt accacaggaa taccagtact ttgatgaact cagtggaata      600
cctgcagaag atttgcctta ttatggg                                          627
```


        <210> 684
        <211> 1271
        <212> DNA
        <213> Homo sapiens

        <400> 684
```
gcggcgcgcc gccgcagaca gctggtgtcc cgccggagaa cggccgagat atccccgccg        60
gcggaggagc agccccagcg ccaggcctcc cgacgtcccc gggcagcagc ccaaggccgc      120
gaagtccccg tctccagttc agggcaagaa gagtccgcga ctcctatgca tagaaaaagt      180
aacaactgat aaagatccca aggaagaaaa agaggaagaa gacgattctg ccctccctca      240
ggaagtttcc attgctgcat ctagacctag ccggggctgg cgtagtagta ggacatctgt      300
ttctcgccat cgtgatacag agaacacccg aagctctcgg tccaagaccg gttcattgca      360
gctcatttgc aagtcagaac caaatacaga ccaacttgat tatgatgttg agaagagca      420
tcagtctcca ggtggcatta gtagtgaaga ggaagaggag gaggaagaag agatgttaat      480
cagtgaagag gagataccat tcaaagatga tccaagagat gagacctaca aaccccactt      540
agaaagggaa accccaaagc cacggagaaa atcagggaag gtaaaagaag agaaggagaa      600
gaaggaaatt aaagtggaag tagaggtgga ggtgaaagaa gaggagaatg aaattagaga      660
ggatgaggaa cctccaagga agagaggaag aagacgaaaa gatgacaaaa gtccacgttt      720
acccaaaagg agaaaaaagc ctccaatcca gtatgtccgt tgtgagatgg aaggatgtgg      780
aactgtcctt gcccatcctc gctatttgca gcaccacatt aaataccagc atttgctgaa      840
gaagaaatat gtatgtcccc atccctcctg tggacgactc ttcaggcttc agaagcaact      900
tctgcgacat gccaaacatc atacagatca aagggattat atctgtgaat attgtgctcg      960
ggccttcaag agttcccaca atctggcagt gcaccggatg attcacactg cgagaagcc     1020
attacaatgt gagatctgtg gatttacttg tcgacaaaag gcatctctta attggcacat     1080
```

```
gaagaaacat gatgcagact ccttctacca gttttcttgc aatatctgtg gcaaaaaatt      1140
tgagaagaag gacagcgtag tggcacacaa ggcaaaaagc caccctgagg tgctgattgc      1200
agaagctctg gctgccaatg caggcgccct catcaccagc acagatatct tgggcactaa      1260
cccagagtcc c                                                           1271
```

```
        <210> 685
        <211> 685
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(685)
        <223> n = a,t,c or g
```

```
        <400> 685
atgagggtcg tcccacgcgt ccgcttggtc catgtgagag aagctggctg ctgaaatgac       60
tgcgaaccgg cttgcagaga gccttctggc tttgagccaa caggaagaac tagcggattt      120
gccaaaagac tacctcttga gtgagagtga agatgagggg gacaatgatg gagagagaaa      180
gcatcaaaag cttctggaag caatcagttc ccttgatgga aagaataggc ggaaattggc      240
tgagaggtct gaggctagtc tgaaggtgtc agagttcaat gtcagttctg aaggatcagg      300
agaaaagctg gtccttgcag atctgcttga gcctgttaaa acttcatctt ctttggccac      360
tgtgaaaaag caactgagta gagtcaaatc aaagaagaca gtggagttac ctctgaacaa      420
agaagagatt gaacggatcc acagagaagt agcattcaat aaaaccgcac aagtcctctc      480
caaatgggac cctgtcgtcc tgaagaaccg gcaggcagag cagctggttn ttcccctgga      540
gaaagaggag ccagccattg ctcccattga acatgtgctc agtggctgga aaggcagaac      600
tcccctggag cangaaattn tcaacctnct ncatangaac aagcagncag tgacagaccc      660
tttactgacc cctgtggaaa ggcct                                            685
```

```
        <210> 686
        <211> 962
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 686
cgcggccgcg tcgactttaa gattaaattc atgtattgaa aatattgttc agaccccatg       60
tgacataact ggagccagtg cagtgccatg aagaactacg agattagcct ggatattaac      120
ttgtcttcta gagaatagat ttcatgttcc attcttctgc aatggttaat tcacacagaa      180
aaccaatgtt taacattcac agaggatttt actgcttaac agccatcttg ccccaaatat      240
gcatttgttc tcagttctca gtgccatcta gttatcactt cactgaggat cctggggctt      300
tcccagtagc cactaatggg gaacgatttc cttggcagga gctaaggctc cccagtgtgg      360
tcattcctct ccattatgac ctctttgtcc accccaatct cacctctctg gactttgttg      420
catctgagaa gatcgaagtc ttggtcagca atgctaccca gcttatcatc ttgcacagca      480
aagatcttga aatcacgaat gccacccttc agtcagagga agattcaaga tacatgaaac      540
caggaaaaga actgaaagtt ttgagttacc ctgctcatga acaaattgca ctgctggttc      600
cagagaaact tacgcctcac ctgaaatact atgtggctat ggacttccaa gccaagttag      660
gtgatggctt tgaagggttt tataaaagca catacagaac tcttggtggt gaaacaagaa      720
ttcttgcagt aacagatttt gagccaaccc aggcacgcat ggctttccct tgctttgatg      780
```

```
aaccgttgtt caaagccaac ttttcaatca agatacgaag agagagcagg catattgcac    840
tatccaacat gccaaaggtt aagacaattg aacttgaagg aggtcttttg gaagatcact    900
ttgaaactac tgtaaaaatg agtacatacc ttgtagccta catagtttgt gatttccact    960
ct                                                                   962
```

```
      <210> 687
      <211> 676
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 687
accgatcgaa gatccctcgg agcgacccac gcgtccggac gccagcgcct gcagaggctg     60
agcagggaaa aagccagtgc cccagcggaa gcacagctca gagctggtct gccatggaca    120
tcctggtccc actcctgcag ctgctggtgc tgcttcttac cctgcccctg cacctcatgg    180
ctctgctggg ctgctggcag cccctgtgca aaagctactt cccctacctg atggccgtgc    240
tgactcccaa gagcaaccgc aagatggaga gcaagaaacg ggagctcttc agccagataa    300
aggggcttac aggagcctcc gggaaagtgg ccctactgga gctgggctgc ggaaccggag    360
ccaactttca gttctaccca ccgggctgca gggtcacctg cctagaccca aatccccact    420
ttgagaagtt cctgacaaag agcatggctg agaacaggca cctccaatat gagcggtttg    480
tggtggctcc tggagaggac atgagacagc tggctgatgg ctccatggat gtggtggtct    540
gcactctggt gctgtgctct gtgcagagcc caaggaaggt cctgcaggag gtccggagag    600
tactgagacc gggaggtgtg ctctttttct gggagcatgt ggcagaacca tatggaagct    660
gggccttcat gtggca                                                    676
```

```
      <210> 688
      <211> 639
      <212> DNA
      <213> Homo sapiens
```

```
      <400> 688
cggacgcgtg ggcgtatttg cgcgtatgag atgcattgtc tcttcctctg gagttgagct     60
gaatgaatac ctccgaagcc gttttgttct ccaaatggga atagctccac tataccagcc    120
tcgtcttcct tccggggggac aacgtgggtc agggcacaga gagatattta atgtcaccct    180
cttggggctt tcatgggact ccctctgcca cattttttgg aggttgggaa agttgctaga    240
ggcttcagaa ctccagccta atggatccca aactcgggag aatggctgcg tccctgctgg    300
ctgtgctgct gctgctgctg ctggagcgcg gcatgttctc ctcaccctcc cgcccccgg     360
cgctgttaga gaaagtcttc cagtacattg acctccatca ggatgaattt gtgcagacgc    420
tgaaggagtg ggtggccatc gagagcgact ctgtccagcc tgtgcctcgc ttcagacaag    480
agctcttcag aatgatggcc gtggctgcgg acacgctgca gcgcctgggg gcccgtgtgg    540
cctcggtgga catgggtcct cagcagctgc ccgatggtca gagtcttcca atacctcccg    600
tcatcctggc cgaactgggg agcgatccca cgaaaggct                           639
```

```
      <210> 689
      <211> 116
```

<212> DNA
<213> Homo sapiens

<400> 689

```
tttttttttt ttgagatgga gtcttgctct gtcacccagg ctggagtgcc gtggcacgat      60
ctcagctcac tgcaacctcc acctcccagg ttcaagcgat tctcgtgcct cagcct         116
```


<210> 690
<211> 509
<212> DNA
<213> Homo sapiens

<400> 690

```
acaaacaggt ggggtcaagc acggagagag aactgcccag ggtataaaaa gggcccacag      60
gagaccggct ctaggatccc aaggcccaac tccccgaacc actcagggtc ctgtggacag     120
ctcacctagt ggcaatggct ccaggctccc ggacgtccct gctcctggct tttgccctgc     180
tctgcctgcc ctggcttcaa gaggctggtg ccgtccaaac cgttccgtta tccaggcttt     240
ttgaccacgc tatgctccaa gcccatcgcg cgcaccagct ggccattgac acctaccagg     300
agtttgaaga aacctatatc ccaaaggacc agaagtattc attcctgcat gactcccaga     360
cctccttctg cttctcagac tctattccga caccctccaa catggaggaa acgcaacaga     420
aatccaatct agagctgctc cgcatctccc tgctgctcat cgagtcgtgg ctggagcccg     480
tgcggatcct catgagtata gtccccaac                                       509
```


<210> 691
<211> 1362
<212> DNA
<213> Homo sapiens

<400> 691

```
tttcgtgaaa cttatcaaga aacaccaggc tgctatggag aaagaggcta aagtgatgtc      60
caatgaagag aaaaaatttc agcaacatat tcaggcccaa cagaagaaag aactgaatag     120
ttttctcgag tcccagaaaa gagagtataa acttcgaaaa gagcagctta agaggagct     180
aaatgaaaac cagagtaccc ccaaaaaaga aaaacaggag tggctttcaa agcagaagga     240
gaatatacag catttccaag cagaagaaga agctaacctt cttcgacgtc aaagacaata     300
cctagagctg gaatgccgtc gcttcaagag aagaatgtta cttgggcgtc ataacttaga     360
gcaggacctt gtcagggagg agttaaacaa aagacagact cagaaggact tagagcatgc     420
catgctactc cgacagcatg aatctatgca agaactggag ttccgccacc tcaacacaat     480
tcagaagatg cgctgtgagt tgatcagatt acagcatcaa actgagctca ctaaccagct     540
ggaatataat aagcgaagag aacgagaact aagacgaaag catgtcatgg aagttcgaca     600
acagcctaag agtttgaagt ctaaagaact ccaaataaaa aagcagtttc aggatacctg     660
caaaatccaa accagacagt acaaagcatt aagaaatcac ctgctggaga ctacaccaaa     720
gagtgagcac aaagctgttc tgaaacggct caaggaggaa cagacccgga aattagctat     780
cttggctgag cagtatgatc acagcattaa tgaaatgctc tccacacaag ccctgcgttt     840
ggatgaagca caggaagcag agtgccaggt tttgaagatg cagctgcagc aggaactgga     900
```

```
gctgttgaat gcgtatcaga gcaaaatcaa gatgcaagct gaggcacaac atgatcgaga    960
gcttcgcgag cttgaacaga gggtctccct ccggagggca ctcttagaac aaaagattga   1020
agaagagatg ttggctttgc agaatgagcg cacagaacga atacgaagcc tgttggaacg   1080
tcaagccaga gagattgaag cttttgactc tgaaagcatg agactaggtt ttagtaatat   1140
ggtcctttct aatctctccc ctgaggcatt cagccacagc taccegggag cttctggttg   1200
gtcacacaac cctactgggg gtccaggacc tcactggggt catcccatgg gtggcccacc   1260
acaagcttgg ggccatccaa tgcaaggtgg accccagcca tggggtcacc cttcaaggcc   1320
caatgcaaag gggtacctcg aggagcagta tgggagtccg ct                      1362
```

```
<210> 692
<211> 503
<212> DNA
<213> Homo sapiens
```

```
<400> 692
gatcacgtgg gcagctccgg gcgcggcgct tgttttggtt tccttctaac ttgcccacgg    60
cagcttcggg gtgagcgact ttcctgcacc agctgccgcg cctgctcaca ccctgacctc   120
gttttcgggc tctctgagcc cgcagttccg caagcccctg gggcgggctc ctgccatgcc   180
gctagtccgc tacaggaagg tggtcatcct cggataccgc tgtgtaggga agacatcttt   240
ggcacatcaa tttgtggaag gcgagttctc ggaaggctac gatcctacag tggagaatac   300
ttacagcaag atagtgactc ttggcaaaga tgagtttcac ctacatctgg tggacacagc   360
agggcaggat gagtacagca ttctgcccta ttcattcatc attggggtcc atggttatgt   420
gcttgtgtat tctgtcacct ctctgcatag cttccaagtc attgagagtc tgtaccaaaa   480
gctacatgaa ggccatggga aaa                                           503
```

```
<210> 693
<211> 1671
<212> DNA
<213> Homo sapiens
```

```
<400> 693
gcggcttgtg tccacgggac gcggtacgga tgcttctccg gccatgagga aaccagccgc    60
tggcttcctt ccctcactcc tgaagggtga gaggtttaca cctgctccaa cagactctcc   120
ccgggctagt cctctccctc ccgagagctc tgcttttacg gtttctggat cgcttcctca   180
tggtggtcgc gctgggtcgg ctccctaggt cctgggatac tcccatctcc ccccgcccgc   240
ggccggacct ttgcctctgt ctctagactc cccccgccct ggtcagcagg gataaccctc   300
accccgttcc taatttgcca gtctgggtct gtctgccctg gtctcggagc gggtttttggg   360
gttcggtcct ttcatcatcc ggtcgcccgc tccgcagtgc tgctcctgcc tctggcacct   420
gccgcagccc aggattcgac tcaggcctcc actccaggca gccctctctc tcctaccgaa   480
tacgaacgct tcttcgcact gctgactcca acctggaagg cagagactac ctgccgtctc   540
cgtgcaaccc acggctgccg gaatcccaca ctcgtccagc tggaccaata tgaaaaccac   600
ggcttagtgc ccgatggtgc tgtctgctcc aacctccctt atgcctcctg gtttgagtct   660
ttctgccagt tcactcacta ccgttgctcc aaccacgtct actatgccaa gagagtcctg   720
tgttcccagc cagtctctat tctctcacct aacactctca aggagataga agcttcagct   780
gaagtctcac ccaccacgat gacctccccc atctcacccc acttcacagt gacagaacgc   840
cagaccttcc agccctggcc tgagaggctc agcaacaacg tggaagagct cctacaatcc   900
tccttgtccc tgggaggcca ggagcaagcg ccagagcaca gcaggagca aggagtggag   960
cacaggcagg agccgacaca agaacacaag caggaagagg ggcagaaaca ggaagagcaa   1020
```

```
gaagaggaac aggaagagga gggaaagcag gaagaaggac aggggactaa ggagggacgg    1080
gaggctgtgt ctcagctgca gacagactca gagcccaagt ttcactctga atctctatct    1140
tctaacccctt cctcttttgc tccccgggta cgagaagtag agtctactcc tatgataatg    1200
gagaacatcc aggagctcat tcgatcagcc caggaaatag atgaaatgaa tgaaatatat    1260
gatgagaact cctactggag aaaccaaaac cctggcagcc tcctgcagct gccccacaca    1320
gaggccttgc tggtgctgtg ctattcgatc gtggagaata cctgcatcat aaccccaca    1380
gccaaggcct ggaagtacat ggaggaggag atccttggtt tcgggaagtc ggtctgtgac    1440
agccttgggc ggcgacacat gtctacctgt gccctctgtg acttctgctc cttgaagctg    1500
gagcagtgcc actcagaggc cagcctgcag cggcaacaat gcgacacctc ccacaagact    1560
ccctttgtca gccccttgct tgcctcccag agcctgtcca tcggcaacca ggtagggtcc    1620
ccagaatcag gccgctttta cgggctggat ttgtacggtg ggctccacat g              1671
```

```
        <210> 694
        <211> 898
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(898)
        <223> n = a,t,c or g


        <400> 694
tttttttttt ttgtgacagt ttctccactt tattagcctg gagctcctcc ctgccagccc      60
caggggctgg tcgctggtcc ctgggcacag tgagcagggc tgaggtcaga cgggttcggc     120
ccttggccat ggcagcttgg ttgggacagc cgggccaagg gaaaaaaagg tgcaaaagtc     180
caaatgctgg cacttcaggt gtggccggca cccagccagg cgcagtgggt gggcagggcg     240
ccatgcttct ctcctggcga caggtcggcc gtgtagcagc gcccctccc agcagccact       300
aggaacagct ggtgattctc gccaggaact gctgcgccca ccactcgtct aggtcaatgg     360
ggcacaaagt tctgcagccg gggattgggg gtcctctcca cgtactcac aggccttggc       420
ccgccctcac cggctgggcc accatccagc tgctgttgca cctgctgcca ggcttcggac     480
acaaagcgga cattctcctc gtgggccact gtgtaggtct cctgggtccc ctcgaaggat     540
ggggacgtgg aggggccccg ccggccattc acacgattga acacaagcct ggccctgga     600
ctgcaggaag ggaggagacg gacatggttg gtgcccatcc caggtgcggt gctgcctggc     660
agaactcagg agcagccccg ggccagccca ctttccccag acttggccag cctaggcact     720
tcctgaacca gagagagcag ccacccacag cagccggtgg cccaggcctc tcttgcagtc     780
cccaagccat cggcagctca gctcacacct gcagccctgt gtcctgaggg aagtgagtga     840
ctgtagggggg ganatgcncc gcctagaggt tcgatcggtg gaaagacagc cgggcccc      898
```

```
        <210> 695
        <211> 630
        <212> DNA
        <213> Homo sapiens




        <400> 695
caaccccgcc gccggggaca tgtccaaccc ctgaagccgg aggaacgggc cagtcagact      60
gcgcccgaca ggtatattga aaagtctgat tcagttacaa tcagtgtatg gaatcacaag     120
aagatccata agaaacaagg tgctggattt ctccgttgtg ttcgtctttt tccagtgcca     180
```

```
tcaaccacct caaagacact ggttatcaga ggttggattt atgcaaactt gggccaaagg      240
acagttagaa gacagtagct gaagaagcat ctgtagggaa tccagaagga gcattcatga      300
agatgttaca agcccggaag cagcacatga gcactgagct gactattgag tcggaggcgc      360
cctcagacag cagtggcatc aacttgtcag gctttgggag tgagcagcta gacaccaatg      420
acgagagtga tgttagcagc gcactaagtt acatcttgcc ttatctctca ctgagaaatc      480
taggtgcaga atcaatattg ttaccgttca ctgaacagct attttcaaat gtacaagatg      540
gagataggct cctgagtatt ttgaaaaaca atagaaagag cccctcacag tccagccttc      600
taggtaacaa atttaaaaac aaaatatttg                                       630
```

```
            <210> 696
            <211> 879
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 696
tttcgtctga agcacagaca ccacttcccc aatctacagg agccatttta acagctaaaa       60
cttgtcggat tgctttttat tttcaagctc aaaagacgat agagaaagaa tacttgaagg      120
ccaagaagct tgagagaaga aaaatttcag aaaaattgtc tcaatttgac tagaatatca      180
atgaaccagg aaaactgaag caccttccct aaagaaaact tgggtataca attactccac      240
agacagagct gagggttttt tacccaaatc agtcactgga ttttgctgcc tgatacgtga      300
atcttcttgg aatttttctc atgtggatct aaggggaatg ctttattatg gctgctgttg      360
tccaacagaa cgacctagta tttgaatttg ctagtaacgt catggaggat gaacgacagc      420
ttggtgatcc agctattttt cctgccgtaa ttgtggaaca tgttcctggt gctgatattc      480
tcaatagtta tgccggtcta gcctgtgtgg aagagcccaa tgacatgatt actgagagtt      540
cactggatgt tgctgaagaa gaaatcatag acgatgatga tgatgacatc acccttacag      600
ttgaagcttc ttgtcatgac ggggatgaaa caattgaaac tattgaggct gctgaggcac      660
tcctcaatat ggattcccct ggccctatgc tggatgaaaa acgaataaat aataatatat      720
ttagttcacc tgaagatgac atggttgttg ccccagtcac ccatgtgtcc gtcacattag      780
atgggattcc tgaagtgatg gaaacacagc aggtgcaaga aaaatatgca gactcaccgg      840
gagcctcatc accagaacag cctaagagga aaaaaaaaa                             879
```

```
            <210> 697
            <211> 719
            <212> DNA
            <213> Homo sapiens
```

```
            <400> 697
ggcacgaggc gagcggagtt agcagggctt tactgcagag cgcgccgggc actccagcga       60
ccgtggggat cagcgtaggt gagctgtggc cttttgcgag gtgctgcagc catagctacg      120
tgcgttcgct acgaggattg agcgtctcca cccatcttct gtgcttcacc atctacataa      180
tgaatcccag tatgaagcag aaacaagaag aaatcaaaga gaatataaag actagttctg      240
tcccaagaag aactctgaag atgattcagc cttctgcatc tggatctctt gttggaagag      300
aaaatgagct gtccgcaggc ttgtccaaaa ggaaacatcg gaatgaccac ttaacatcta      360
caacttccag ccctgggggt attgtcccag aatctagtga aaataaaaat cttggaggag      420
tcacccagga gtcatttgat cttatgatta aaggtatgaa aaaatagata acttttgtct      480
taatttttaaa ttatgatata aggaaaaatt tgttaatact attatgaatt ctgccaatta      540
ctgtaatctg gggatagtat aacagcacta taaatgtttt tgtatgtgac catttgtttg      600
acaagatcca tgtgtggatg aaatgttagg aaaagggagg cccagtggaa gtgggctcac      660
```

acctgtaatc ccagtaggct agggaggttg aagcaagagg atggcttgag tctagaagt   719

            <210> 698
            <211> 420
            <212> DNA
            <213> Homo sapiens

        <400> 698
acatttcgtg ttaatggcgg gcagtagccg ctgaggggat tgcagataac cgcttcccgc   60
acggggaaag tctaccctgc ctgccacttt ctgctcgccg tcagcgccgg agctcgccag   120
catgtctgtg gtaccgccca atcgctcgca gaccggctgg ccccggggggg tcactcagtt   180
cggcaacaag tacatccagc agacgaagcc cctcaccctg gagcgcacca tcaacctgta   240
agtgcggcgc ggccttggcg ggcatttctc tcgtgaaagc tcctatagac tctccgacgc   300
gcccccggct tttcggcgcg cttcacgcct ctgcacctcc ccgcctccaa ctcccgctgg   360
cggatgcgcg ccttcctccc tctctcaggc ccctttctca tcctccagcc tccaggattc   420

            <210> 699
            <211> 422
            <212> DNA
            <213> Homo sapiens

        <400> 699
gcggaaggag aagatgtgcc gccgctgcca acgtcgagcg gcgacggctg ggaaaaagat   60
cttgaagaag ctctggaagc aggaggttgt gatcttgaaa cgttgagaaa tataattcaa   120
ggaagaccgc tgcctgctga tctgagggcc aaagtttgga agattgctct gaatgttgca   180
ggaaaaggtg atagtttggc atcatgggat ggtatttttag acttgccaga acagaacact   240
attcacaaag attgcctgca gtttattgac cagctttcag tgccagagga gaaggcagca   300
gaattacttt tggatattga atctgtaatt accttttatt gtaaatcacg taacattaaa   360
tatagcacat cccttagctg gatacatcta ctgaaaccat tggtgcatct tcaactgcca   420
cg   422

           <210> 700
           <211> 412
           <212> DNA
           <213> Homo sapiens

        <400> 700
cagatcactc ccaaatatag ccctctccag aaaccacttg gatagaaaaa agtccaaaga   60
gaactgaggt gtccaacaca tgagtgaggc cttcctggat ctctagctct cgtcaagcct   120
tcccaacacc acgaggaaca aaaatgagcc atccaaatga gctttacccca aattcctgac   180

                                     388

```
ccacggtgtc aagagcaatg aaagggttgt cgtttggctc tttccgccat cttttcgtgc   240
cgccacaatg gtgcacatga atgtcctgcc tgatgctctc aagagcatca acaatgccga   300
aagaagaggc aaaccccagg ttcttattag gctgtgctcc aaaatcatca tctggtttct   360
cactgtaatg gtgaagtatg gttacattgg caaatttgaa cccacgcgtc cg           412
```

<210> 701
<211> 977
<212> DNA
<213> Homo sapiens

<400> 701
```
agcggccgct tgccggcgtt ctggctcctg tggcctcacc aggaagcgtc agagtcccga    60
cactggggaa gctcggagcg ccgcctccgc tgccgccgcc tcctgcctgg ctctgggtcc   120
ccgagccccc tccctggcc cagcccgact ccctcctcct tcccgaacca tccggctcgg   180
gctccttccc tggcgatggc tggccgctga gccatggctc agtacggcca ccccagtccg   240
ctcggcatgg ctgcgagaga ggagctgtac agcaaagtca cccccggag gaaccgccaa   300
cagcgccccg gcaccatcaa gcatggatcg cgcctggacg tgctcctctc catggggttc   360
cccagagccc gcgcacaaaa agccttggca tccacgggag gaagaagtgt tcaggcagca   420
tgtgactggt tattctccca tgtcggtgac cccttcctgg atgaccccct gccccgggag   480
tacgtcctct acctccgtcc caccggcccc ttagcacaga agctttccga cttttggcag   540
cagtcgaagc agatctgcgg gaagaacaag gcacacaaca tcttcccca catcacactc   600
tgccagttct ttatgtgcga ggacagcaag gtggatgccc tgggggaagc cctgcagacc   660
acggtcagtc gctggaaatg taagttctcg gccccgctgc ccctggagct ctatacgtcg   720
tccaacttca tcggcctctt tgtaaaggaa gacagtgcgg aggtcctcaa gaagtttgct   780
gctgactttg ctgcagaggc tgcatccaaa accgaagtgc atgtggaacc tcataagaag   840
cagctacatg tgaccctggc ttaccacttc caagccagcc acctacccac cctagagaaa   900
ctggcccaga acattgacgt caagctaggg tgtgactggg tggctaccat attttctcgg   960
gatatccgat ttgctac                                                 977
```

<210> 702
<211> 406
<212> DNA
<213> Homo sapiens

<400> 702
```
ggcagacgag gccggcttct ccgcggacag ctagggagag tgtcctgggt gtcagccaga    60
acatgtcttt caacctgcaa tcatcaaaga aactgttcat tttcttagga aaatcactgt   120
ttagtcttct ggaggctatg attttttgcct tactcccaaa gccacggaag aacgttgctg ,  180
gtgaaatagt cctcatcaca ggtgctggaa gtggactcgg aaggctctta gccttgcagt   240
ttgcccggct gggatctgtt cttgttctct gggatatcaa taaggagggg aatgaggaaa   300
catgtaagat ggctcgggaa gctggagcca caagagtgca cgcctatacc tgcgattgca   360
gccaaaagga aggagtgtat agagtagccg accaggttaa aaaaga                  406
```

<210> 703
```

```
<211> 987
<212> DNA
<213> Homo sapiens



      <400> 703
tttttttttt ttgtgtttat aacaggtttt actttttttc ttaaaatggg gatgttctta        60
ctaaatacca ttttatttca tttcttcaca gatcttctgg ttcttgatca tctataatta       120
tcaagtgtcg tatataggga acaagtattg atgttcaata tgattcaaac tattactgtt       180
ccatagtcag tggagctttt tcaatgtcca gaaagaatac tttcaatctt tatgaacagc       240
ctaggatttt gcagttgttt ctgaaggctc aaattgtcct gcttcaaatt tttctttgaa       300
ttttaagtag tctcttcttt tatcaaaata ttttatccac tgttggggac aacttgattc       360
gaaagagctt cttaacttct tgcattgaga agcatcctct aagttctcat ctaaacactt       420
ccagtactca tcccgggccc cccagcagac ctgtctttcc ttcatagatg gggctgccat       480
tcctactgcg atgaagctct ctgcccgccc acgtccggct tcctttcgat gtcgacggga       540
ggaaactgtc acgcaggcca ccaaccggcg gtggagggcg cggtgccgag tcctgccact       600
gcagggtcgc cccgctggct caagctctag aagcgtagac ctccccagcc gcaaaaagca       660
agtcacgcgg cgaaaccgcg gactcttttg acccttccga gctaccattt actttccata       720
gaggggcggg acttcctgtt tcgctttat cttgtctcgc tcttccgccc agtctcgagt       780
gcagtggtga aacacggct tactgcagcc tcaaaatcct ggacccaaaa gatcctccca       840
cctcagcctg cctcccaggt agctgggact acaggcgcac aacaccatcg cttcttggat       900
taaaagaaaa ggatgaaacg ggccccagaa agaggcggtg acgtcccaga acccatggca       960
ggggagttgg gaaaataaat atttgta                                         987
```

```
      <210> 704
      <211> 473
      <212> DNA
      <213> Homo sapiens



      <400> 704
cacctgcacc ggctgcgagg agcagggagc tcctcaaaga gctcaggaac ggacaggaca        60
tggacacagt ggtctttgaa gacgtggttg tggatttcac gctggaggag tgggccttgc       120
tgaatcctgc tcagagaaaa ctctacagag atgtcatgct ggagaccttc aagcacctgg       180
cctcagtaga taatgaggct cagcttaaag ccagtgggtc tatttctcag caggatactt       240
ctggagaaaa attatccctc aaacagaaaa tagaaaagtt cacaagaaag aatatatggg       300
cctccctttt aggaaaaaat tgggaagaac atagcgttaa agacaagcac aacaccaagg       360
agagacattt gagcagaaat ccaagggtgg agagaccatg taaaagcagt aaaggtaata       420
aacgtggaag aaccttcaga aagactcgaa attgtaatcg tcatctgcgc agg             473
```

```
      <210> 705
      <211> 435
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(435)
      <223> n = a,t,c or g
```

<400> 705
```
tttttttttt caattatttta taaaacttta atgagggaga ggccctaact cttcctcagc    60
tctaccaact actgaaagga aaagctggtg ctggggagcc ctccacacca ctgactgatg   120
aatttcagca cgtcctggca cactgggctg tgggaggtct gtgagcaaat ggaagaacat   180
gagaggaact tgttaatgct ggaaatacaa aatcagctcc atcgcaggct tcagggtctg   240
catctgcctt cctgtaatcc cacccatctt tntagtgtgt atgtgggttt tttgtttgtt   300
ttgagacaaa gtcttgcttt gtcgcccagg ctggagtgca gtggcacaat ctcagctcac   360
tgcaagctct gcctcccggg ttcaagcaat tctcctgcct cagcctcctc agtagctggc   420
attataggcg cgtgc                                                    435
```

<210> 706
<211> 894
<212> DNA
<213> Homo sapiens

<400> 706
```
cggcacgagg ttgaggcggc ggcgcgaggc agtatggttt gaagtggtga acatggattt    60
ttctcggctt cacatgtaca gtcctcccca gtgtgtgccg gagaacacgg gctacacgta   120
tgcgctcagt tccagctatt cttcagatgc tctggatttt gagacggagc acaaattgga   180
ccctgtattt gattctccac ggatgtcccg ccgtagtttg cgcctggcca cgacagcatg   240
caccctgggg gatggtgagg ctgtgggtgc cgacagcggc accagcagcg ctgtctccct   300
gaagaaccga gcggccaggt gagcaccgct gcacttcctc tccatctgat ctctaacacc   360
agttaaaacc aagcttccat acttttggt ctgtaaagcc gcaccctgtc tcgagcttaa   420
ggatatgtgt gtgtatgtgc gtgtacagac acacaacct gccatataaa gtggtagttt   480
gctgcaaata aagactgaaa ggaactctgg aatctgtgtg gcttgtctag tattgatgtt   540
ctgctgttct tgtttcaagt tctcttcgct ggtgcacgcc acgtgcagtg ccagcactca   600
ggtctggaag ctttgtggtc ctgtggtggg agctcagcta cagctgtcct accacatgtg   660
taaagaggaa ggaatcttac agattacaca tgctgtcgtg gacgatctcc gtgtccagtt   720
cattctttt tctggagacg gagtctcgct cttgtcgccc agggtggaat gcagtggcac   780
gatctcagct cactgcctcc tctgtctccc gggttcaagc gattctactg cacgcagcct   840
cctgagtagc tgggattaca ggcgcccgcc accacgcctg ggcaacagag tgag          894
```

<210> 707
<211> 410
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(410)
<223> n = a,t,c or g

<400> 707
```
tttctgcagg actgtaaact ggattcctgg aacctttgat attcctggct gtgtatagtg    60
```

```
cctgttggtg gactgtactg atactcaact agagtgtgaa gggactggat tcctgcccct    120
gagacacaat gcaagctgta gtgcccttga acaagatgac agccatctca ccagaacctc    180
aaactctggc ctcgactgaa caaaatgagg tcccaagagt ggttacttct ggggaacaag    240
aagctatttt aagaggaaat gctgctgatg cagagtcttt cagacagagg tttaggtggt    300
tttgttactc agaagtagct ggacccagga aagctctgag tcaactctgg gagctctgca    360
atcagtggct gagaccagac attcacacga aagaancaga ttttagagct              410
```

```
        <210> 708
        <211> 650
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 708
gccgatttgc ctgttctcac gccccaccct cagacctagc cggagcaaag tttcacttat    60
agaagggaga ggagcgaaca tggcagcgcg ttggcggttt tggtgtgtct ctgtgaccat    120
ggtggtggcg ctgctcatcg tttgcgacgt tccctcagcc tctgcccaaa gaaagaagga    180
gatggtgtta tctgaaaagg ttagtcagct gatggaatgg actaacaaaa gacctgtaat    240
aagaatgaat ggagacaagt tccgtcgcct tgtgaaagcc ccaccgagaa attactccgt    300
tatcgtcatg ttcactgctc tccaactgca tagacagtgt gtcgtttgca agtatgaact    360
ccaactacgc tttaaaatta aataactcat ataacgttaa ccatttctca atcccagaag    420
ggccaagtta gtgcagtagg tacttaaata atgtgtatac cttactcagg atgtctatgg    480
tagcaatact actgctcttt tatagtcaat tcttgattat ccgtatcagt gggggaagca    540
tggataaata attgtggtag ccatcataaa agtaacttaa agatcaaaca gtcatcttat    600
aaattagtat caacttggcg gggcatgggg gctcatgcct gtaatccccg                650
```

```
        <210> 709
        <211> 534
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 709
tttcgtggcg aacgaggccc cacctctgcc gggagcggga cgagcgcgca ggcgcagtct    60
ccccaggttg tagacgctgc ggcccggccc ggcgggtaaa taacagatgc gggtgaaaga    120
tccaactaaa gctttacctg agaaagccaa aagaagtaaa aggcctactg tacctcatga    180
tgaagactct tcagatgata ttgctgtagg tttaacttgc caacatgtaa gtcatgctat    240
cagcgtgaat catgtaaaga gagcaatagc tgagaatctg tggtcagttt gctcagaatg    300
tttaaaagaa agaagattct atgatgggca gctagtactt acttctgata tttggttgtg    360
cctcaagtgt ggcttccagg gatgtggtaa aaactcagaa agccaacatt cattgaagca    420
ctttaagagt tccagaacag agccccattg tattataatt aatctgagca catggattat    480
atggtggtat gaatgggatg aaaaaatttt caccccttg aataaaaaag gttg           534
```

```
        <210> 710
        <211> 478
        <212> DNA
```

<213> Homo sapiens

<400> 710
```
gattgagacc ctattcgaga ccatagtcca tgtggtggaa ttctgatgtc tcaactccgg      60
cctctaggaa cttgaatgag gacaggaggg tcagagggag agcctaggag gctgagccaa     120
ggagcgtgga gaggagagac agggtgaagg tggcggctgg ctttctggaa gcaggtggcc     180
tttggtgcgg tcagcattcg tgccagcccc ctcttctctg atcctctcca tgtgtctctc     240
tcctggaatc ccagaagctg cccctgactc cccattaact gcctctgccc ctaccccta      300
ggtgatgctt ctgggagaca caggcgtcgg caaaacatgt ttcctgatcc aattcaaaga     360
cggggccttc ctgtccggaa ccttcatagc caccgtcggc atagacttca gggtgaggtg     420
gctgcaggca cttgcttcca gcagagagcc agggctgtgg ctcaggcatg ggggggtt       478
```


<210> 711
<211> 585
<212> DNA
<213> Homo sapiens

<400> 711
```
cttctacccc cggagctcag ctgatcttcc cttccagact acgaggtgtg aatttcaaac      60
ttccgtaatg gagttagccc acagtttatt gctaaatgaa gaagctttgg ctcaaatcac     120
cgaagcaaaa agaccagttt tcatctttga atggttgcga tttcttgata aagtcttggt     180
tgctgccaac aaggtatggt attgctcttt ttcccagtt gcattaacgt gaagagatta     240
tgtggtcatg attcttaaga aaacacatgt tatgttttgg aaggtttatg ggtcacttat     300
ggaacttgag agtattacac gaatgggaaa tttagtggca aaactcaaac ctcgtttaaa     360
tccagctcat tgcctatctt ctttatgttt gtacctgggc agctcattgt aactggagaa     420
aaacatggct atatgactgg tgtcacttta aatttatcat cgtcacccgt tgcaagtgat     480
ctctctatgc tgcctaacaa tcccagtgtc ttcacttatc tctttgagga gtcaataata     540
ggctcttttt tttttaatct gtttttttctt cctgcatagc cttgt                   585
```


<210> 712
<211> 391
<212> DNA
<213> Homo sapiens

<400> 712
```
acaaacagag aactggtttt gacagtgttt ctagagtgct ttttattatt ttcctgacag      60
ttgcgttcca ccatgattac tttctccttc agcgaatagg ctaaatgaat atgaaacaga     120
aaagcgtgta tcagcaaacc aaagcacttc tgtgcaagaa ttttcttaag aaatggagga     180
tgaaaagaga gagcttattg gaatggggcc tctcaatact tctaggactg tgtattgctc     240
tgttttccag ttccatgaga aatgtccagt ttcctggaat ggctcctcag aatctgggaa     300
gggtagataa atttaatagc tcttctttaa tggttgtgta tacaccaata tctaatttaa     360
cccagcagat aatgaataaa acagcacttg c                                    391
```


393

```
<210>  713
<211>  524
<212>  DNA
<213>  Homo sapiens




    <400>  713
atccccacag ggtaatgggt gtcccgatgt cacgggggac tctgtgatcc gtgttcccct      60
gaccctccta gtgcacaact tggccgggct cactgggctc·ctgcaccact gcctgtcagg     120
tccgctgcca gccccaagcc ccccaccagc catgagctcc tccagaaagg accacctcgg     180
cgccagcagc tcagagcccc tcccggtcat cattgtgggt aacggccct ctggtatctg      240
cctgtcctac.ctgctctccg gctacacacc ctacacgaag ccagatgcca tccacccaca     300
cccctgctg cagaggaagc tcaccgaggc cccgggggtc tccatcctgg accaggacct      360
ggactacctg tccgaaggcc tcgaaggccg atcccaaagc cccgtggccc tgctctttga     420
tgcccttcta cgcccagaca cagactttgg gggaaacatg aagtcggtcc tcacctggaa     480
gcaccggaag gagcacgcca tcccccacgt ggttctgggc cgga                      524




    <210>  714
    <211>  2468
    <212>  DNA
    <213>  Homo sapiens




    <400>  714
gaatcgacgc acgcgtgcgc agcgctgcca gcgtggaagg agctgcgggg cgcgggagga      60
ggaagtagag cccgggaccg ccaggccacc accggccgcc tcagccatgg acgcgtccct     120
ggagaagata gcagacccca cgttagctga aatgggaaaa aacttgaagg aggcagtgaa     180
gatgctggag gacagtcaga gaagaacaga agaggaaaat ggaaagaagc tcatatccgg     240
agatattcca ggcccactcc agggcagtgg gcaagatatg gtgagcatcc tccagttagt     300
tcagaatctc atgcatggag atgaagatga ggagccccag agccccagaa tccaaaatat     360
tggagaacaa ggtcatatgg ctttgttggg acatagtctg ggagcttata tttcaactct     420
ggacaaagag aagctgagaa aacttacaac taggatactt tcagatacca ccttatggct     480
atgcagaatt ttcagatatg aaaatgggtg tgcttatttc cacgaagagg aaagagaagg     540
acttgcaaag atatgtaggc ttgccattca ttctcgatat gaagacttcg tagtggatgg     600
cttcaatgtg ttatataaca agaagcctgt catatatctt agtgctgctg ctagacctgg     660
cctgggccaa taccttgta atcagctcgg cttgcccttc ccctgcttgt gccgtgtacc      720
ctgtaacact gtgtttggat cccagcatca gatggatgtt gccttcctgg agaaactgat     780
taaagatgat atagagcgag gaagactgcc cctgttgctt gtcgcaaatg caggaacggc     840
agcagtagga cacacagaca gattgggag attgaaagaa ctctgtgagc agtatggcat     900
atggcttcat gtggagggtg tgaatctggc aacattggct ctgggttatg tctcctcatc     960
agtgctggct gcagccaaat gtgatagcat gacgatgact cctggcccgt ggctgggttt    1020
gccagctgtt cctgcggtga cactgtataa acacgatgac cctgccttga ctttagttgc    1080
tggtcttaca tcaaataagc ccacagacaa actccgtgcc ctgcctctgt ggttatcttt    1140
acaatacttg ggacttgatg ggtttgtgga gaggatcaag catgcctgtc aactgagtca    1200
acggttgcag gaaagtttga agaaagtgaa ttacatcaaa atcttggtgg aagatgagct    1260
cagctcccca gtggtggtgt tcagattttt ccaggaatta ccaggctcag atccggtgtt    1320
taaagccgtc ccagtgccca acatgacacc ttcaggagtc ggccgggaga ggcactcgtg    1380
tgacgcgctg aatcgctggc tgggagaaca gctgaagcag ctggtgcctg caagcggcct    1440
cacagtcatg gatctggaag ctgagggcac gtgtttgcgg ttcagccctt tgatgaccgc    1500
agcaggtaaa ccaggcttgg tggacatccc ttgcttttgt tctgggctg ctgggtagat    1560
tagcttgccc ttatgatact ccattctcct agagttatta gcagctctt ttggagggggc   1620
```

```
attttctttt  cttttgggct  aaatttaggt  agattagcat  tcccatgtaa  cttaccagaa   1680
tcagaatgag  aattcagaag  tcacctgaat  tggccgggca  tggtggctca  cacctgtaat   1740
cccagcacct  tgggaggcca  aggcaggcag  atcatctgag  gtcaggagtt  cgagaccagc   1800
ctggccaaca  tagtgaaatc  ccgcccctac  taaaaataca  aaaaattagc  caggcaccct   1860
gtccacagcc  cccacacaga  ctcgaggggc  ccccatctcc  tgttctgaac  ccaacagggt   1920
ggtcccactg  tgggaccaca  accaggtatg  actgtgtgag  aagcaggctc  actaccaggc   1980
taccagggag  cacaggggag  caggcgccac  cttgaggcat  aaacccagag  aaacaagacc   2040
tccaagacgg  ccaggcactg  gggcacacgc  cggtaacaca  gcaccgtggg  agctgagacg   2100
gaaggatcgc  ctgagcccag  gattttgaaa  ccaccctggg  caacacagtg  agaccccgta   2160
tctacaaaaa  aatacacatt  agccaggcat  ggcggcatgc  gcctggggtc  ccaagtactc   2220
gggaggtaga  ggagagaaaa  atcacttgag  cccagagagg  tcaaggctac  agggagctga   2280
gatcgcatca  ctgtactcca  gctggggtga  aacggcgaga  ctctacctca  aaaataaata   2340
aatacataca  taattaataa  ataaaacatc  aaagaccagc  cgacctaact  ccatctaaaa   2400
tacacaactt  ctacgcaaaa  tataaataaa  attagaaaac  aaactacaat  ctcagaaaag   2460
cactagca                                                                 2468
```

```
        <210> 715
        <211> 924
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(924)
        <223> n = a,t,c or g
```

```
        <400> 715
tttcgtgtaa  gatataactc  aactttgaaa  atgtcagccg  ttatagttga  agaaatctga    60
cccaagagac  ttcgctccgc  tgcaagatgg  aaggaagctt  aagtaagaca  taaatttgta   120
atgaacttgc  tcacaacatc  cgccgccact  gtgacttgca  gtcatcatcc  attaccacaa   180
aattagttgc  aggatggcta  ctcgtatccc  tccacacatg  atcatcagta  tttgcctcct   240
gtgtcccaac  cggcctgagt  caaggttacg  actcactgat  taaaagagg   gacttttttca  300
aatactttgc  acttttgatt  gtgtattatg  gataccaagg  aagagaagaa  ggaacggaaa   360
caaagttatt  ttgctcgact  gaaaaagaaa  aaacaagcca  aacaaaatgc  agagacagcc   420
tcagctgtag  ctacaaggac  tcatactggg  aaggaagata  ataatacagt  agtttttagag  480
ccagacaagt  gcaacattgc  tgtggaagag  gaatatatga  ctgatgagaa  aaaaaagaga   540
aaaagtaatc  agttaaagga  gatcaggcgt  acagaactaa  agagatatta  tagtattgat   600
gacaatcaaa  acaaaacaca  tgataaaaaa  gagaagaaga  tggtggttca  gaagccccat   660
gggactatgg  aatacactgc  tggaaaccag  gacaccctaa  actccatagc  actgaaattt   720
aacatcactc  ccaataaatt  ggtggaactg  aataaacttt  tcacacatac  tattgttcca   780
ggccaggtcc  tttttgtgcc  agatgccaac  tctccttcca  gtaccttaag  gctatcatca   840
tccagtcctg  gtgctactgt  ctctccttca  tcatnagatg  cagaatatgn  taattggctg   900
atgctgactt  agcacggaag  gctt                                            924
```

```
        <210> 716
        <211> 679
        <212> DNA
        <213> Homo sapiens
```

        <400> 716
tttcgtgctg tggcgcgcgg ccggcagagg gaggggagag gccactgggg ccgtgttagt   60
ctgccggtgg ggactcttgc agggccgtcc ccatgttgcg ttttccgacc tgtttcccat   120
ccttccgggt ggtgggagag aagcagctcc cgcaggagat tattttcctg gtctggtcgc   180
ccaagcggga tctcattgct ttggccaaca cagctggcga ggtttttactt catcgactgg   240
caagtttttca tcgagtttgg agttttccac caaatgaaaa tacaggaaag gaggtgacgt   300
gtctggcatg agaccagat ggcaaacttt tggcctttgc tcttgctgat accaagaaaa   360
ttgttttgtg tgatgtagaa aaacctgaga gcttacactc ttttctgtg gaggctccag   420
tttcctgtat gcattggatg gaagtgacag tagaaagcag tgttctcaca tcattttata   480
atgctgagga tgaatcaaat cttctcttac ctaaactacc tacactgcca aaaaactata   540
gcaacacctc aaaaatattt agtgaagaaa attctgatga aattattaag ctcttgggag   600
acgtcaggct taatattctc gtccttggag gaagctctgg atttattgag ctttatgctt   660
atggaatgtt taaaattgc   679

        <210> 717
        <211> 821
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(821)
        <223> n = a,t,c or g

        <400> 717
ctttcatact gcctcctccc ttgttttttct gtctcagaga gatagtctgt cctaaatatc   60
ccatgtagcc caggccactg aattaaaacg gagcgtattc gttctctgcc ccaccccgca   120
actcctgaaa gcggcgcaac tcaattactt gatccttata tgccccacgc gggactcata   180
ctacgtttcc cgtgaacacg tgcagtccaa accccgcccc tgatatttat ctcagtggac   240
ggtggccgga aaaggacaat ggtttccatg tcagcggata aacgctctcc cctcggctcc   300
cggacgcgac ggaggtcgta gtagtagtga gtacgtgctg aggagcaaag gagtaaccaa   360
gagatccagt gaccgacaga gcaagagcca tgccgcgccg gggcctggtg gctgggccag   420
acttggagta ttttcagcgt cactatttca cgccggcgga ggtggcccaa cataacaggc   480
ccgaagacct ctgggtatct tacctgggac gcgtgtacga cctaacgtca ttggcacagg   540
aatacaaggg gaacctgctg ctgaaaccca tcgtggaagt tgcaggccag gatatcagcc   600
actggtttga tccaaagacc agagacgtga gttatgctgg aacctgggat tgtgggtaga   660
ggaaatggag agcggggatg ggaaggaaag gcggaggcta gccagagcct aatggctgct   720
ctgacaccct cgccccaaac cctcctttaa agatccgcaa gcacgaattc caccacatgg   780
nataagggtc gtcaatgnnn nnnnaagggg natcaancc c   821

        <210> 718
        <211> 480
        <212> DNA
        <213> Homo sapiens

        <400> 718
ccggattccg ggtcgacgat ttcgtgcggc ttttgtgttg ggcagcgcga atgtggcgag   60

396

```
ctcggtgcgt ctccgctgct ccttcccctt atccctggga ggtccaagtg gtcccgcggc    120
agcttctgtt gctctgggac ctgcaggtcc cggaaggtcc ttagggagga ccccagacac    180
cggagactgg gaaatggatt cagtgtcatt tgaagatgtg gctgtggcct ttactcagga    240
ggagtgggct ttgctggatc cttctcaaaa gaatctctac agagatgtga tgcaagaaat    300
cttcaggaac ctggcttctg taggaaacaa atcagaagac cagaatatcc aagatgactt    360
caaaaatcct gggagaaatc taagcagtca tgtggtagag agactgtttg aaattaaaga    420
aggcagtcaa tatggagaaa ccttcagcca ggattcaaat ttgaatctga ataagatagt    480
```

        <210> 719
        <211> 467
        <212> DNA
        <213> Homo sapiens

        <400> 719

```
cgtaatctct cagcctttct gtgtctcctt tcctccgcct cagtttgggg cgggtcgggg    60
gaatggctga ggagatggag tcgtcgctcg aggcaagctt ttcgtccagc ggggcagtgt   120
caggggcctc agggtttttg cctcctgccc gctcccgcat cttcaagata atcgtgatcg   180
gcgactccaa tgtgggcaag acatgcctga cctaccgctt ctgcgctggc cgcttccccg   240
accgcaccga ggccacgata ggggtggatt ccgagaacg agcggtggag attgatgggg    300
agcgcatcaa gatccagcta tgggacacag caggacaaga acgattcaga aagagcatgg   360
ttcagcacta ctacagaaat gtacatgctg ttgtcttcgt gtatgatatg accaacatgg   420
ctagtttttca tagcctacca tcttggatag aagaatgcaa acaacat                 467
```

        <210> 720
        <211> 490
        <212> DNA
        <213> Homo sapiens

        <400> 720

```
tggcaccgat ccgagattcc cggatcgacg atttcgtcgg agccccgagg ggccggagct    60
cctggcggtg ccggatcctg acggcggcct tcccccgggt cgattgtgat catggctgct   120
gagtctgatg ttctgcattt ccagtttgaa cagcaaggag atgtggtctt gcagaaaatg   180
aatcttttga gacagcagaa tttattttgt gatgtatcaa tttacattaa tgacactgag   240
ttccaggggc acaaggtgat tttggctgct tgctccactt ttatgagaga tcagttttta   300
ctcacacagt caaaacatgt cagaatcacc atcttacaga gtgcagaagt tggcagaaaa   360
ttgttactgt cttgctatac tggagcactt gaagttaaaa ggaaagagct tttgaaatac   420
ttgactgctg ccagttacct tcagatggtt cacattgcgg aaaagcgcac agaagctttt   480
gtcaagttct                                                            490
```

        <210> 721
        <211> 706
        <212> DNA
        <213> Homo sapiens

```
        <400> 721
agaggaggtt ggtgtggagc acaggcagca ccgagcctgc cccgtgagct gagggcctgc    60
agtctgcggc tggaatcagg atagacacca aggcaggacc cccagagatg ctgaagcctc   120
tttggaaagc agcagtggcc cccacatggc catgctccat gccgccccgc cgcccgtggg   180
acagacaggc tggcacgttg caggtcctgg gagcgctggc tgtgctgtgg ctgggctccg   240
tggctcttat ctgcctcctg tggcaagtgc cccgtcctcc cacctggggc caggtgcagc   300
ccaaggacgt gcccaggtcc tgggagcatg gctccagccc agcttgggag cccctggaag   360
cagaggccag gcagcagagg gactcctgcc agcttgtcct tgtggaaagc atcccccagg   420
acctgccatc tgcagccggc agcccctctg cccagcctct gggccaggcc tggctgcagc   480
tgctggacac tgcccaggag agcgtccacg tggcttcata ctactggtcc ctcacagggc   540
ctgacatcgg ggtcaacgac tcgtcttccc agctgggaga ggctcttctg cagaagctgc   600
agcagctgct gggcaggaac atttccctgg ctgtggccac cagcagcccg acactggcca   660
ggacatccac cgacctgcag gttctggctg cccgaggtgc ccatgt              706
```

```
        <210> 722
        <211> 677
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 722
tttcgtaacg ccgcgtgctc ttcccaaggg gaggacgcgg gagaagccgg ggcctgagtg    60
ctccaaggcc ccgtgggctt cttgggtttg ttgcctccgg ccgctcatta actcaggatg   120
gcgtggaaga cctcgcccgc ctcccccttct gggccgcggc tccgcttaag tgaaggcctg   180
tttgggcgtc cccaccctgg agaggggccg gggtctggat tttcagaact gccactcttc   240
tagtgcgctg gcgtcaatgc tcccttcctc gggccattgg agactccgtt gctttttaat   300
ggcggcagcg gctgctgggt gagcagctgg aggccggaca gtgttcgtcc catccggaga   360
ggatcgcttt ctcctggcgt caccagcgct gggttggtgg gggtagcttt tccctctttg   420
ctcctccatt cttgaagaaa gaagaagatg ccactgccat ttgggttgaa actgaaacgc   480
acccggcgct acacggtgtc cagcaagagt tgcctggttg cccggatcca actgcttaat   540
aacgagtttg tggagttcac cctgtccgtg gagagcactg gccaggaaag cctcgaggcc   600
gtggcccaga ggctggagct gcgggaggtc acttacttca gcctctggta ctacaacaag   660
caaaatcagc gccggtg                                             677
```

```
        <210> 723
        <211> 600
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 723
tttcgtgttg agcaccttcg tcgccattgg ctttcctccc ccagctccag cctctctcat    60
cttgggaatc tgcgtcagaa gtcactcgca gtcccgtcag cccagaagac gtaaagcagg   120
ctaccagcaa ttttgagaac ttgcaaaaac agcttgcaag gaaaatgaag cttcctattt   180
tcatagcaga tgcattcaca gcaagagcat ttcgtgggaa tcctgctgct gtttgcctcc   240
tagaaaatga attggatgaa gacatgcatc agaaaattgc aagggagatg aacctctctg   300
```

```
aaactgcttt tatccgaaaa ctgcacccga cagacaactt tgcacaaagt tcctgctttg    360
gactgagatg gtttacacca gcgagtgagg tcccactctg tggccatgcc accctggctt    420
ctgcagctgt gctgtttcac aaaataaaaa acatgaatag cacgctcacg tttgtcactc    480
tgagtggaga actaagggcc agacgagcag aggacggcat cgtcctggac ttgcctcttt    540
atccagccca cccccaggac ttccatgaag tagaggactt gataaagact gccataggca    600
```

```
        <210> 724
        <211> 530
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 724
tttcgttgcg cgttccggaa ctggtttccc ggaaggagta tgtctgcgcc ttcgatccga    60
ccggaagttg cacgctgagc cgcggacacc atgcagtcgg atgatgttat ctgggataca   120
ctaggaaaca agcaattttg ttccttcaaa ataagaacca agactcagag cttctgccga   180
aatgaatata gcctgactgg actgtgtaat cggtcatcct gtcccctggc aaatagtcag   240
tatgccacta ttaaagaaga gaaaggacag tgctacttgt atatgaaggt tatagaacga   300
gcggctttc ctcggcgtct ctgggaacgg gtccggctta gtaaaaacta tgagaaagca   360
ctggagcaaa tagatgaaaa tctgatttac tggccccgtt tcattcgaca caaatgtaag   420
cagagattca ccaagatcac ccaataccta attcgaatta gaaaacttac actaaagcga   480
cagaggaaac ttgttccttt gagtaagaag gtggagcgta gggagaaaag               530
```

```
        <210> 725
        <211> 428
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 725
tttcgtagag cggggactcg gcgaccctgc cctcccgacc ctcatgttcg aagagcctga    60
gtgggccgag gcggccccag tagccgcggg ccttgggccc gtaatctcac gacctccgcc   120
tgcggcctcc tcgcaaaaca aggtgagtga ctcgcgggag caatgggagc tgtttcaggc   180
cgcgaagcgg acattggtgg atcccagcgc tgtgtgtatt gcggggaggg acacctgtgg   240
caccgttaag ggcgagtcct gatctgaaga tccgagaact tccaaaagaa actgacgttg   300
ggtcagagag agttgttgag taaaagttgg tgaagcgaag agggttcttc agacaggaaa   360
aagtacgtac aagggccctg ggacaagaga gcatgttctg tcagagtcac aaacacaagt   420
ggtccttt                                                             428
```

```
        <210> 726
        <211> 859
        <212> DNA
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

<222> (1)...(859)
<223> n = a,t,c or g

<400> 726

```
gtggtggaat tcctctggag caggaggccc agtggctctt ctgacccaag gccccgccgt      60
ccagcttcta agtgccagat gatggaggag cgtgccaacc tgatgcacat gatgaaactc     120
agcatcaagg tgttgctcca gtcggctctg agcctgggcc gcagcctgga tgcggaccat     180
gccccccttgc agcagttctt tgtagtgatg gagcactgcc tcaaacatgg gctgaaagtt     240
aagaagagtt ttattggcca aaataaatca ttctttggtc ctttggagct ggtggagaaa     300
ctttgtccag aagcatcaga tatagcgact agtgtcagaa atcttccaga attaaagaca     360
gctgtgggaa gaggccgagc gtggctttat cttgcactca tgcaaaagaa actggcagat     420
tatctgaaag tgcttataga caataaacat ctcttaagcg agttctatga gcctgaggct     480
ttaatgatgg aggaagaagg gatggtgatt gttggtctgc tggtgggact caatgttctc     540
gatgccaatc tctggcttga aaggagaaga cttggattct caggttggag taatagattt     600
ttccctctac cttaaggatg tgcaggatct tgatggtggc aaggagcatg aaagaattac     660
tgatgtcctt gatcaaaaaa attatgtgga agaacttaac cggcacttga gctgcacagt     720
tggggatctt caaaccaaga tagatggctt ggaaaagact aactcaaagc ttcaagaang     780
agtttcagct gcaacagacc gaatttgctc acttcaagaa gaacagcagc agttaagaga     840
acaaaatgaa ttaattcga                                                 859
```


<210> 727
<211> 450
<212> DNA
<213> Homo sapiens

<400> 727

```
tttcgtcagt gtggggcctg gaccgctggg taggcgcgtc cagcggcctg agcaggggag      60
ggtaatgagg ctgttacgcg ccttctccgc atcttggcgg gagcctgacg ccccgcttct     120
tccctaacgg ggtgttccac cggcgcctgc cgaggcctag gcctccgcag ccgccctccg     180
tctcctcagc cccgacgctg cgcccgcttt gtgctcattt ttctctgggg aaactgaggc     240
tccgagtgcg aaagtcagcc gaggtcgccc cgcccaggac agagaagggc tgggggtcgg     300
ctgagccgcg gcattcccgg gccccgctag ggctgcaggg tctcaggatg gcagcctcgg     360
cgcaggtgtc tgtgaccttt gaggatgtgg ctgtgacatt cacccaggag gagtggggac     420
agttggatgc agcccagaga accttgtatc                                     450
```


<210> 728
<211> 439
<212> DNA
<213> Homo sapiens

<400> 728

```
tttcgtgggt cgctttcctc accttcctcg ctgcgcgggc ggcggttggt aaccggtcag      60
accagcccga gagggacctg gtgcctgtac ccaggcttct gtcgctctgt cgcctgcgct     120
atgccctgct gtagtcacag gagctgtaga gaggaccccg gtacatctga aagccgggaa     180
```

```
atggacccag tggtctttga ggatgtggct gtgaacttca cccaggaaga gtggacattg    240
ctggatattt cccagaagaa tctcttcagg gaagtgatgc tggaaacttt caggaacctg    300
acctctatag gaaaaaaatg gagtgaccag aacattgaat atgagtacca aaaccccaga    360
agaagcttca ggagtctcat agaagagaaa gtcaatgaaa ttaaagaaga cagtcattgt    420
ggagaaactt ttacccagg                                                 439
```

```
        <210> 729
        <211> 236
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 729
cggccgcgtc gaccgacgtt agtgagggac ccaatgtgag tccccggcca gctgaatcca     60
agccgtgtgt actgcgtggt cagcactgcc cgacagtcct agctaaactt cgccaactcc    120
gctgcctttg ccgtcaccat gccacagaat gaatatattg aattacaccg taaacgctat    180
ggattccgtt tggattacca tgagaaaaag agaaagaagc aaagtcgaga ggctca        236
```

```
        <210> 730
        <211> 807
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 730
tgggaacaca agttgacgct ttttgtgttc cttgagtcca gtcgggaagg gcccttgtga     60
ctgggtctca tgccaaacaa cttgttacaa taagagctag ggtcccagac catgcggaaa    120
cttcatgaga atcctctgta gtctggtgag tgtagtgtcc gactctggag cccaggctgt    180
tgcttcccgg tctggtggtg aatcctccat agtctggaga tctcagccct gctgagctga    240
tgatgctgac tataggagat gttattaaac aactgattga gcccacgag cagggggaaag    300
acatcgatct aaataaggtg aaaaccaaga cagctgccaa atatggcctt tctgcccagc    360
cccgcctggt ggatatcatt gctgccgtcc ctcctcagta tcgcaaggtc ttgatgccca    420
agttaaaggc gaaacccatc agaactgcta gtgggattgc tgtcgtggct gtgatgtgca    480
aaccccacag atgtccacac atcagtttta caggaaatat atgtgtatac tgccctggtg    540
gacctgattc tgattttgag tattccaccc agtcttacac tggctatgag ccaacctcca    600
tgagagctat ccgtgccaga tatgaccctt tcctacagac aagacaccga atagaacagt    660
taaaacaact tggtcatagt gtggataaag tggagtttat tgagatgggt ggaacgttta    720
tggcccttcc agaagaatac agagattatt ttattcgaaa tttacatgat gccttatcag    780
gacatacttc caacaatatt tacgagg                                        807
```

```
        <210> 731
        <211> 944
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 731
tttcgtgtga ggggagggggc gcgtgctaaa ccagaagagg taaaccaatg cagtgagaga      60
gaggtggttg tgggctccac agcttctgat ttggaggaag ctgcgagacc gagagcctag     120
gagcacccttc cacgcccagg gctgtggtac aggttggtgg gggagggggcg ccacgcggtg     180
tttggcagga aggggaggcc tctctactga ccggaagctg cgctagaaaa agaaggagga     240
gactgcggcg cagcagcgac tagtgggagt ccgatgtggg agagggggctg cggccaccgc     300
caccgccgcc gccaccagga aggcggagga cgcaggagcc aagagcaagg gacgccgcca     360
cggtcatctt cgcctgcccc gccgccctct tagagacact cattgcctat ggatcatcct     420
ctcccagctt ttgcaagcac cgggctgctc gcccgctgat tttcctcctc cataggctca     480
ctgcggaggc aacggcgagg tgtccgattt gtgcacttga ggcccgcaat ccgggacggt     540
ggggaatctg cgcctcctgg ccgggcatga agacccccgtt tggaaaggca gctgcagggc     600
agcggtccag gacgggcgct ggccacggca gtgtgtctgt taccatgata aagaggaagg     660
ctgcacacaa gaagcatagg agccgaccca cctcccagcc tcgggggaac atcgtgggct     720
gcataattca gcacggatgg aaagatggag atgaacctct aacacagtgg aaaggaaccg     780
ttctggatca gctcctttga ataaacctgc ccaccaccaa gaacccatac atgactttct     840
tttcattgta tcaaacgaat gtgtccaccg gtgtgagcac cagcaactca cttcttcctc     900
agacatctct aaagctggac agaatatgag ggacaatatc gttt                     944
```

```
        <210> 732
        <211> 761
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 732
ccgagacctc ggtgtggccc ttgaggcatt tcaatgggcg agggccggcg actgtggatc      60
tggagctgga cgcgctggag gggaaggagt tgatgcagga cggcgcgtcc ctgagcgaca     120
gcaccgagga cgaggaggag ggggcgagcc tgggcgacgg cagcggggcg gaaggcggca     180
gctgcagcag cagcaggcgg tcgggcggcg atggcgggga cgaagtggag ggcagcggtg     240
tgggagctgg cgaaggagag actgtccagc acttcccgct cgcgcggccc aagtctctaa     300
tgcagaagct ccaatgctcc ttccagacct cctggctcaa ggactttccc tggctgcgct     360
attccaagga tactggtctt atgtcttgcg gctggtgcca aaagacccct gcagatgggg     420
gaagcgtgga ccttcccccca gtggggcatg atgagctttc gcgagggacc cgcaactaca     480
agaaaaccct cctcctgagg caccacgtct ctaccgagca caaactccac gaagccaacg     540
cccaggagtc agaaatacca tcagaggagg ggtactgtga ctttaatagt aggccaaatg     600
agaactctta ttgctatcaa cttctgcgac aactaaatga acagagaaag aaaggtattc     660
tttgtgatgt cagcattgtg gtaagcggaa aaatcttcaa agctcataag aacatcctgg     720
ttgcaggcag ccgtttcttt aagactttat attgcttttc a                        761
```

```
        <210> 733
        <211> 523
        <212> DNA
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(523)
        <223> n = a,t,c or g
```

```
       <400> 733
aattcccggg tcgacgattt cgtgcgggag cagagatctg cgggcgnttg cagcttgcgg        60
tagggaggcg tggtggtctg aagcctccga gcagccgcgg ccatggcgga tgtaaccgcc       120
cgtagtctgc aatacgagta caaggcgaac tcgaatcttg tgctccaagc tgaccgttct       180
ctcattgacc ggacccgccg ggatgaaccc acaggagagg tgctgtccct tgttgggaag       240
ctggagggca cccgtatggg agacaaggct caacggacca aaccgcagat gcaggaggaa       300
agaagagcca agcgaagaaa gcgtgatgag gaccggcatg acatcaacaa gatgaagggt       360
tatactctgc tgtcggaggg cattgatgag atggtgggca tcatctacaa gcccaaaact       420
aaagagactc gggagaccta tgaggtgcta ctcagcttca tccaggctgc tcttggggac       480
cagccacgtg atatcctttg tggggcagct gatgaagttc tag                        523
```

```
       <210> 734
       <211> 1341
       <212> DNA
       <213> Homo sapiens
```

```
       <400> 734
tttttttttt ttaaccagat tatttcactt attatttatt ttatcttcca atttcctctt        60
gccagactcc catccaaaga gtcataagca gccttcttcc caccttctta catgaaatac       120
atccccacct gaacaaaggc acacggacag gaggaagggg aataggactt cgcaaaactg       180
gacacggcat cgcttcagat cttggactct gaggttccgt tgttactggt ttcacagtta       240
caggcttcgg atggtctgca cgtgctgttt caagactaat ggtagtctct attgcttctg       300
ttatgtcctt atccaacctg ttcagcctgt cctctgactc aaatatggag taatcaatgg       360
tgaaatctgc actaaagtca tcataactgg gggtgactgt ataataatag accacctgat       420
aatattcatc ctctcccagt ctttcttcat cctcatattc ttgtcccagg ataagtggca       480
cagcaaagat ggctacaaag aggacatcca ttctggattc tgcactattg catcaccacc       540
cagagttgcc tttctctctg aggcttcatc agtctctttt cgtcacagtg aaatgttct         600
gaggaagggg tgagcatttt tctagactga aaagaatccc tttcttctgt ctgtctggag       660
cagccatggg ggctgcggtg ttttcggct gcactttcgt cgcgttcggc ccggccttcg         720
cgctttctt gatcactgtg ctgggaccc gcttcgcgt tatcatcctg gtcgcagggt          780
gagtagaggg cccgggagac gcgggagagc gtcgaagaga gaggtgcgga aggggctgga       840
ggaactgggg caagcctggg agcctgaatt ggggacgata agtcggaggt gaagtttggg       900
cggaggtgag gggttgggtc tgggagattt gtcctttccc gcagttggtt tccaccttcc       960
aaggatctca cagattcctc ctatattcct cccagcgacg tcagagaagg cccaaggccg      1020
agactcgtga gggggctgtg ctgacctagg caggccgagt caggtgcctt aggggaggat      1080
ccaggaacgg atacctcgcc cttccgtgct cgcacactct ggctgtcatc gctctgaaga      1140
ctctttaatt agatttctcc cctttccagt gcgttcactt ttctacagat gagtctcctg      1200
gtggagacag ttaccctacc tggtccatgt ctccctaacc atccggaagg ctaacttcca      1260
ctttcaagc agctttggct ggtttccctc cttgatttct ctggctccca ctactattgc       1320
ttgtctcact gcccctgtat t                                                1341
```

```
       <210> 735
       <211> 703
       <212> DNA
       <213> Homo sapiens
```

```
     <400> 735
tttcgtgaga ggcccaggtg aggagcaagc gcccgcgttc cggaagcccg ctcccggggc        60
catggggca caggtgaggc tgccgccgg agagccctgc cgagaaggat atgtgctgtc         120
tctggtctgt ccaaactcct cccaggcttg gtgtgagatc acaaatgtgt cacagctgct       180
ggcttctcct gtgctctaca cggacctgaa ttacagcata aacaacttga gcatttcagc       240
aaatgtagaa aacaaataca gtctttatgt gggcttggta ctggcagtaa gctcaagtat       300
ttttattggc tccagcttca tactgaaaaa gaagggcctc ttgcaactgg ccagcaaggg       360
ctttactaga gctggacaag gtggacattc ttacctgaag gaatggctct ggtgggtagg       420
attgctgtca atactgtcct ggaatgcaag ggaaaaagtt gacctttgaa atattacatt       480
ttaaccacag acttcttgta ttttcttcac cataacaata gagaaaagta cttttctttc       540
atattttccc acctcctaat ttgaacaact attgtagctg catattttct caagaaagag       600
tacagtttcc ttgccaggac aacacggata agtgaaaggc ttctgtggct gcttggtact       660
gaacaaatgg agaagaaatg aagggtgtca gcactctcct tcc                         703
```

```
     <210> 736
     <211> 401
     <212> DNA
     <213> Homo sapiens
```

```
     <400> 736
tttcgtctgg cgtggacgtt tgtggtgggg cgtgttggtc cgcgctctca gaactgtgct        60
gggaaggatg gtaggcgac tgggctcac ctccgcaccg ttgtaggacc cggggtaggg         120
ttttgagccc gtgggagctg ccccacgcgg cctcgtcctg ccaacggtcg gatggcggag       180
acgaaggacg cagcgcagat gttggtgacc ttcaaggatg tggctgtgac ctttacccgg       240
gaggagtgga gacagctgga cctggcccag aggaccctgt accgagaggt gatgctggag       300
acctgtgggc ttctggtttc actagggcat cgggttccca aaccagagtt ggtccacctg       360
ctaaagcatg ggcaggagct gtggatagtg aagagaggcc t                         401
```

```
     <210> 737
     <211> 933
     <212> DNA
     <213> Homo sapiens
```

```
     <400> 737
agcggccgct cgccgtgtt gtgtgtcccc ggtgtcaccg agcgtgttgt gtgtccgtgc         60
ggcgcggcgc tcgtgtggct ccctcgcgcc caccacgctg gcccccgggc cccggctcgc        120
ccttcccagg cgccggctgc agcagagttt cagaacaagc ttcctggaac ccatgaccca       180
tgaagtcttg tcgacattta taccgtctga gggtagcagc tcgaaagtag aagaaagtgt       240
tgccagggac ggcagtatct ctttgtgtga ccctggcggc ttatgggacg ttggcttcag       300
acctttgtga tacaccatgc tgcgtgggac gatgacggcg tggagaggaa tgaggcctga       360
ggtcacactg gcttgcctcc tcctagccac agcaggctgc tttgctgact tgaacgaggt       420
ccctcaggtc accgtccagc ctgcgtccac cgtccagaag cccggaggca ctgtgatctt       480
gggctgcgtg gtggaacctc caaggatgaa tgtaacctgg cgcctgaatg gaaaggagct       540
gaatggctcg gatgatgctc tgggtgtcct catcacccac gggaccctcg tcatcactgc       600
ccttaacaac cacactgtgg acggtacca gtgtgtggcc cggatgcctg cggggggctgt       660
ggccagcgtg ccagccactg tgacactagc cagtgagtct gctcctttgc ctccctgcca       720
tggtgcggtc cctcctcatc tctcccaccc tgaagccccc accattcatg ctgcctcttg       780
```

```
ttactcttag cataaaatgg gccttaactg cagaaatgtc aaatcagaac agtagctgcc   840
ttagtaatgc ccagtgatgg gggacccctt gtgcccttgg aaaacctcac tccaagtaga   900
ggctgtatct ggagtgagtg tctacagaga ggg                               933
```

```
        <210> 738
        <211> 420
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 738
ctggggtcgg cggagacagc tggtgtctga agccgctcgc gcccagggtg accctgtttg    60
cagcacgatg tctgaagaag aggcggctca gatccccaga tccagtgtgt gggagcagga   120
ccagcagaac gtggtgcagc gtgtggtggc tctgccctg gtcagggcca cgtgcaccgc   180
ggtctgcgat gtttacagtg cagccaagga caggcacccg ctgctgggct ccgcctgccg   240
cctggctgag aactgcgtgt gcggcctgac cacccgtgcc ctggaccacg cccagccgct   300
gctcgagcac ctgcagcccc agctggccac tatgaacagc ctcgcctgca ggggcctgga   360
caagctggaa gagaagcttc cctttctcca gcaaccttcg gagacggtgg tgacctcagc   420
```

```
        <210> 739
        <211> 1248
        <212> DNA
        <213> Homo sapiens
```

```
        <400> 739
tttcgtagcg agtaaagaag cagatttgct ctccctcccg cttcctccct cccatcttcc    60
cacccgggct gtgcccaggc cacagagcag ctgcaggcct tgggagagga cccacacagc   120
ctcctgtagg tggcaacagt gccacctgtt tgactcatag ggctgaaccg aggactgaaa   180
aagggaggag gcagaccact cggagaggag ctgggaagca gtgcagagag gagagcggag   240
cggagctgcc gctgagcaaa ggccttcacc atggccgagt cccccggctg ctgctccgtc   300
tgggcccgct gcctccactg cctgtatagc tgccactgga ggaaatgccc cagagagagg   360
atgcaaacca gcaagtgcga ctgtatctgg tttggcctgc tcttcctcac cttcctcctt   420
tccctgagct ggctgtacat cgggctcgtc cttctcaatg acctgcacaa cttcaatgaa   480
ttcctcttcc gccgctgggg acactggatg gactggtccc tggcattcct gctggtcatc   540
tctctactgg gcacatatgc atccttgcta ttggtcctgg ccctgctcct gcggctttgt   600
agacagcccc tgcatctgca cagcctccac aaggtgctgc tgctcctcat tatgctgctt   660
gtggcggctg gccttgtggg actggacatc caatggcagc aggagaggca tagcttgcgt   720
gtgtcactgc agactgcagg tagctctgaa ctccagcagt caggccctaa gaggaaagcg   780
gggaggggca ctggagaaga gcccacctca ccagctcttg tccacaggcc acagccccat   840
tccttcatat tggagcagcc gctggaattg ccctcctggc ctggcctgtg gctgatacct   900
tctaccgtat ccaccgaaga gagcccaaga ttctgctact gctcctattt tttggagttg   960
tcctggtcat ctacttggcc cccctatgca tctcctcacc ctgcatcatg gaacccagag  1020
acttaccacc caagcctggg ctggtgggac accgaggggc ccccatgctg gctcccgaga  1080
acaccctgat gtccttgcgg aagacagctg aatgcggagc tactgtgttt gagactgatg  1140
tgatggtcag ctccgatggg gtcccctttcc tcatgcatga tgagcacctc agcaggacca  1200
cgaatgtagc ctctgtattc ccaacccgaa tcacagccca cagcagtg               1248
```

<210> 740
<211> 185
<212> Amino acid
<213> Homo sapiens

<400> 740

```
Phe Val Gly Arg Leu Leu Arg Leu Gly Glu Ala Leu Arg Leu Arg Pro
1               5                   10                  15
Asp Pro Ser Gly Gly Cys Arg Leu Gln Pro Ala Leu Val Gly Glu Thr
            20                  25                  30
Glu Met Ser Glu Lys Glu Asn Asn Phe Pro Pro Leu Pro Lys Phe Ile
        35                  40                  45
Pro Val Lys Pro Cys Phe Tyr Gln Asn Phe Ser Asp Glu Ile Pro Val
    50                  55                  60
Glu His Gln Val Leu Val Lys Arg Ile Tyr Arg Leu Trp Met Phe Tyr
65                  70                  75                  80
Cys Ala Thr Leu Gly Val Asn Leu Ile Ala Cys Leu Ala Trp Trp Ile
            85                  90                  95
Gly Gly Gly Ser Gly Thr Asn Phe Gly Leu Ala Phe Val Trp Leu Leu
            100                 105                 110
Leu Phe Thr Pro Cys Gly Tyr Val Cys Trp Phe Arg Pro Val Tyr Lys
        115                 120                 125
Ala Phe Arg Ala Asp Ser Ser Phe Asn Phe Met Ala Phe Phe Phe Ile
        130                 135                 140
Phe Arg Ser Pro Val Cys Pro Asp Arg His Pro Gly Asp Trp Leu Leu
145                 150                 155                 160
Arg Leu Gly Arg Val Arg Leu Ala Val Gly Asn Trp Ile Leu Pro Val
                165                 170                 175
Gln Pro Gly Arg Cys Arg Gly His Ala
                180                 185
```

<210> 741
<211> 177
<212> Amino acid
<213> Homo sapiens

<400> 741

```
Phe Leu Gly Ala Gly Ala Asp Ile Phe Cys Ala Tyr Leu Arg Met Ser
1               5                   10                  15
Ser Lys Gln Ala Thr Ser Pro Phe Ala Cys Ala Ala Asp Gly Glu Asp
            20                  25                  30
Ala Met Thr Gln Asp Leu Thr Ser Arg Glu Lys Glu Glu Gly Ser Asp
        35                  40                  45
Gln His Val Ala Ser His Leu Pro Leu His Pro Ile Met His Asn Lys
        50                  55                  60
Pro His Ser Glu Glu Leu Pro Thr Leu Val Ser Thr Ile Gln Gln Asp
65                  70                  75                  80
Ala Asp Trp Asp Ser Val Leu Ser Ser Gln Gln Arg Met Glu Ser Glu
            85                  90                  95
Asn Asn Lys Leu Cys Ser Leu Tyr Ser Phe Arg Asn Thr Ser Thr Ser
            100                 105                 110
Pro His Lys Pro Asp Glu Gly Ser Arg Asp Arg Glu Ile Met Thr Ser
        115                 120                 125
```

```
Val Thr Phe Gly Thr Pro Glu Arg Arg Lys Gly Ser Leu Ala Asp Val
    130                 135             140
Val Asp Thr Leu Lys Gln Lys Lys Leu Glu Glu Met Thr Arg Thr Glu
145                 150                 155                 160
Gln Glu Asp Ser Ser Cys Met Glu Lys Leu Leu Ser Lys Asp Trp Lys
                165             170                 175
Glu
177
```

```
        <210> 742
        <211> 434
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 742
Glu Gly Tyr Leu Thr Gly Arg Pro Thr Arg Pro Val Ala Val Arg Gly
  1             5               10              15
Lys Ser Thr Ala Asp Leu Arg Met Met Gly Arg Ser Pro Gly Phe Ala
            20              25              30
Met Gln His Ile Val Gly Val Pro His Val Leu Val Arg Arg Gly Leu
        35              40              45
Leu Gly Arg Asp Leu Phe Met Thr Arg Thr Leu Cys Ser Pro Gly Pro
    50              55              60
Ser Gln Pro Gly Glu Lys Arg Pro Glu Glu Val Ala Leu Gly Leu His
65              70              75              80
His Arg Leu Pro Ala Leu Gly Arg Ala Leu Gly His Ser Ile Gln Gln
            85              90              95
Arg Ala Thr Ser Thr Ala Lys Thr Trp Trp Asp Arg Tyr Glu Glu Phe
        100             105             110
Val Gly Leu Asn Glu Val Arg Glu Ala Gln Gly Lys Val Thr Glu Ala
        115             120             125
Glu Lys Val Phe Met Val Ala Arg Gly Leu Val Arg Glu Ala Arg Glu
    130             135             140
Asp Leu Glu Val His Gln Ala Lys Leu Lys Glu Val Arg Asp Arg Leu
145             150             155             160
Asp Arg Val Ser Arg Glu Asp Ser Gln Tyr Leu Glu Leu Ala Thr Leu
            165             170             175
Glu His Arg Met Leu Gln Glu Glu Lys Arg Leu Arg Thr Ala Tyr Leu
            180             185             190
Arg Ala Glu Asp Ser Glu Arg Glu Lys Phe Ser Leu Phe Ser Ala Ala
    195             200             205
Val Arg Glu Ser His Glu Lys Glu Arg Thr Arg Ala Glu Arg Thr Lys
    210             215             220
Asn Trp Ser Leu Ile Gly Ser Val Leu Gly Ala Leu Ile Gly Val Ala
225             230             235             240
Gly Ser Thr Tyr Val Asn Arg Val Arg Leu Gln Glu Leu Lys Ala Leu
            245             250             255
Leu Leu Glu Ala Gln Lys Gly Pro Val Ser Leu Gln Glu Ala Ile Arg
            260             265             270
Glu Gln Ala Ser Ser Tyr Ser Arg Gln Gln Arg Asp Leu His Asn Leu
    275             280             285
Met Val Asp Leu Arg Gly Leu Val His Ala Ala Gly Pro Gly Gln Asp
    290             295             300
Ser Gly Ser Gln Ala Gly Ser Pro Pro Thr Arg Asp Arg Asp Val Asp
305             310             315             320
Val Leu Ser Ala Ala Leu Lys Glu Gln Leu Ser His Ser Arg Gln Val
            325             330             335
His Ser Cys Leu Glu Gly Leu Arg Glu Gln Leu Asp Gly Leu Glu Lys
            340             345             350
```

```
Thr Cys Ser Gln Met Ala Gly Val Val Gln Leu Val Lys Ser Ala Ala
        355             360             365
His Pro Gly Leu Val Glu Pro Ala Asp Gly Ala Met Pro Ser Phe Leu
    370             375             380
Leu Glu Gln Gly Ser Met Ile Leu Ala Leu Ser Asp Thr Glu Gln Arg
385             390             395             400
Leu Glu Ala Gln Val Asn Arg Asn Thr Ile Tyr Ser Thr Leu Val Thr
            405             410             415
Cys Val Thr Phe Val Ala Thr Leu Pro Val Leu Tyr Met Leu Phe Lys
            420             425             430
Ala Ser
434
```

```
<210> 743
<211> 211
<212> Amino acid
<213> Homo sapiens
```

```
<400> 743
Asn Leu Pro Pro Leu Thr Pro Gln Pro Gly Pro Arg Leu Ala Gly Ser
1               5               10              15
Gly Pro Ser His Trp Phe Ser Pro Leu Ser Leu Pro Val Ala Ser Lys
            20              25              30
Ala Pro Gly Thr Met Ala Gln Ala Leu Gly Glu Asp Leu Val Gln Pro
        35              40              45
Pro Glu Leu Gln Asp Asp Ser Ser Ser Leu Gly Ser Asp Ser Glu Leu
    50              55              60
Ser Gly Pro Gly Pro Tyr Arg Gln Ala Asp Arg Tyr Gly Phe Ile Gly
65              70              75              80
Gly Ser Ser Ala Glu Pro Gly Pro Gly His Pro Pro Ala Asp Leu Ile
            85              90              95
Arg Gln Arg Glu Met Lys Trp Val Glu Met Thr Ser His Trp Glu Lys
            100             105             110
Thr Met Ser Arg Arg Tyr Lys Lys Val Lys Met Gln Cys Arg Lys Gly
    115             120             125
Ile Pro Ser Ala Leu Arg Ala Arg Cys Trp Pro Leu Leu Cys Gly Ala
130             135             140
His Val Cys Gln Lys Asn Ser Pro Gly Thr Tyr Gln Glu Leu Ala Glu
145             150             155             160
Ala Pro Gly Asp Pro Gln Trp Met Glu Thr Ile Gly Arg Asp Leu His
            165             170             175
Arg Gln Phe Pro Leu His Glu Met Phe Val Ser Pro Gln Gly His Gly
            180             185             190
Gln Gln Gly Leu Leu Gln Val Leu Lys Ala Tyr Thr Leu Tyr Arg Pro
    195             200             205
Glu Gln Gly
210 211
```

```
<210> 744
<211> 55
<212> Amino acid
<213> Homo sapiens
```

```
<400> 744
```

```
Leu Arg Gly Met Ala Ala Ala Ala Ala Gly Pro Ala Ala Ser Gln Arg
1               5                   10                  15
Phe Phe Gln Ser Phe Ser Asp Ala Leu Ile Asp Gln Asp Pro Gln Ala
            20                  25                  30
Ala Leu Glu Val Gly Glu Pro Phe Leu Leu Pro Pro Leu Pro Ala Asp
        35                  40                  45
Pro Pro Pro Ser Ser Thr Ala
    50                  55
```

```
<210> 745
<211> 182
<212> Amino acid
<213> Homo sapiens
```

```
<400> 745
Trp Ala Cys Phe Arg Ser Ala His Cys Ser Arg His Leu Arg Asn Arg
1               5                   10                  15
Ile Phe Met Tyr Leu Tyr Trp Asp Lys Thr Arg Ser Pro Val Cys Lys
            20                  25                  30
Gly Pro Ala Leu Arg Glu Glu Arg Pro Gln Pro Arg Leu Lys Leu Glu
        35                  40                  45
Asp Tyr Lys Asp Arg Leu Lys Ser Gly Glu His Leu Asn Pro Asp Gln
    50                  55                  60
Leu Glu Ala Val Glu Lys Tyr Glu Glu Val Leu His Asn Leu Glu Phe
65                  70                  75                  80
Ala Lys Glu Leu Gln Lys Thr Phe Ser Gly Leu Ser Leu Asp Leu Leu
            85                  90                  95
Lys Ala Gln Lys Lys Ala Gln Arg Arg Glu His Met Leu Lys Leu Glu
            100                 105                 110
Ala Glu Lys Lys Lys Leu Arg Thr Ile Leu Gln Val Gln Tyr Val Leu
        115                 120                 125
Gln Asn Leu Thr Gln Glu His Val Gln Lys Asp Phe Lys Gly Gly Leu
        130                 135                 140
Asn Gly Ala Val Tyr Leu Pro Ser Lys Glu Leu Asp Tyr Leu Ile Lys
145                 150                 155                 160
Phe Ser Lys Leu Thr Cys Pro Glu Arg Asn Glu Ser Leu Arg Gln Thr
                165                 170                 175
Leu Glu Gly Ser Thr Val
            180     182
```

```
<210> 746
<211> 136
<212> Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(136)
<223> X = any amino acid or stop code
```

```
<400> 746
Xaa Ala Gly Val Gln Met Lys Leu Glu Phe Leu Gln Arg Lys Phe Trp
1               5                   10                  15
Ala Ala Thr Arg Gln Cys Ser Thr Val Asp Gly Pro Cys Thr Gln Ser
```

```
                  20                      25                      30
Cys Glu Asp Ser Asp Leu Asp Cys Phe Val Ile Asp Asn Asn Gly Phe
            35                      40                      45
Ile Leu Ile Ser Lys Arg Ser Arg Glu Thr Gly Arg Phe Leu Gly Glu
        50                      55                      60
Val Asp Gly Ala Val Leu Thr Gln Leu Leu Ser Met Gly Val Phe Ser
    65                      70                      75                      80
Gln Val Thr Met Tyr Asp Tyr Gln Ala Met Cys Lys Pro Ser Ser His
                85                      90                      95
His His Ser Ala Ala Gln Pro Leu Val Ser Pro Ile Ser Ala Phe Leu
                100                     105                     110
Thr Ala Thr Arg Trp Leu Leu Gln Glu Leu Val Leu Phe Leu Leu Glu
            115                     120                     125
Trp Ser Val Trp Gly Ser Xaa  *
        130                     135
```

```
<210> 747
<211> 156
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 747
Cys Arg Gly Arg Leu Ala Gln Leu Glu Glu Ala Ala Val Ala Ala Thr
  1             5                       10                      15
Met Ser Ala Gly Asp Ala Val Cys Thr Gly Trp Leu Val Lys Ser Pro
                20                      25                      30
Pro Glu Arg Lys Leu Gln Arg Tyr Ala Trp Arg Lys Arg Trp Phe Val
            35                      40                      45
Leu Arg Arg Gly Arg Met Ser Gly Asn Pro Asp Val Leu Glu Tyr Tyr
        50                      55                      60
Arg Asn Lys His Ser Ser Lys Pro Ile Arg Val Ile Asp Leu Ser Glu
    65                      70                      75                      80
Cys Ala Val Trp Lys His Val Gly Pro Ser Phe Val Arg Lys Glu Phe
                85                      90                      95
Gln Asn Asn Phe Val Phe Ile Val Lys Thr Thr Ser Arg Thr Phe Tyr
                100                     105                     110
Leu Val Ala Lys Thr Glu Gln Glu Met Gln Val Trp Val His Ser Ile
            115                     120                     125
Ser Gln Val Cys Asn Leu Gly His Leu Glu Asp Gly Ala Ala Asp Ser
        130                     135                     140
Met Glu Ser Leu Ser Tyr Thr Arg Ser Tyr Leu Gln
145                     150                     155 156
```

```
<210> 748
<211> 55
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 748
Ile Pro Ala Val Pro Leu Thr Ser Cys Val Thr Val Gly Ser Tyr Ser
  1             5                       10                      15
Leu Ser Val Arg Asp Tyr Asp Pro Arg Gln Gly Asp Thr Val Lys His
                20                      25                      30
Tyr Lys Ile Arg Thr Leu Asp Lys Arg Gly Phe Tyr Ile Ser Pro Arg
```

```
                    35                    40                    45
Ser Thr Phe Ser Thr Leu Gln
     50                    55


          <210> 749
          <211> 381
          <212>Amino acid
          <213> Homo sapiens




          <400> 749
Lys Asp Ser Val Leu Asn Ile Ala Arg Gly Lys Lys Tyr Gly Glu Lys
 1                   5                  10                  15
Thr Lys Arg Val Ser Ser Arg Lys Lys Pro Ala Leu Lys Cys Thr Ser
              20                  25                  30
Gln Lys Gln Pro Ala Leu Lys Ala Ile Cys Asp Lys Glu Asp Ser Val
         35                  40                  45
Pro Asn Thr Ala Thr Glu Lys Lys Asp Glu Gln Ile Ser Gly Thr Val
     50                  55                  60
Ser Ser Gln Lys Gln Pro Ala Leu Lys Ala Thr Ser Asp Lys Lys Asp
 65                  70                  75                  80
Ser Val Ser Asn Ile Pro Thr Glu Ile Lys Asp Gly Gln Gln Ser Gly
              85                  90                  95
Thr Val Ser Ser Gln Lys Gln Pro Ala Trp Lys Ala Thr Ser Val Lys
              100                 105                 110
Lys Asp Ser Val Ser Asn Ile Ala Thr Glu Ile Lys Asp Gly Gln Ile
         115                 120                 125
Arg Gly Thr Val Ser Ser Gln Arg Gln Pro Ala Leu Lys Ala Thr Gly
     130                 135                 140
Asp Glu Lys Asp Ser Val Ser Asn Ile Ala Arg Glu Ile Lys Asp Gly
145                 150                 155                 160
Glu Lys Ser Gly Thr Val Ser Pro Gln Lys Gln Ser Ala Gln Lys Val
              165                 170                 175
Ile Phe Lys Lys Lys Val Ser Leu Leu Asn Ile Ala Thr Arg Ile Thr
              180                 185                 190
Gly Gly Trp Lys Ser Gly Thr Glu Tyr Pro Glu Asn Leu Pro Thr Leu
         195                 200                 205
Lys Ala Thr Ile Glu Asn Lys Asn Ser Val Leu Asn Thr Ala Thr Lys
     210                 215                 220
Met Lys Asp Val Gln Thr Ser Thr Pro Glu Gln Asp Leu Glu Met Ala
225                 230                 235                 240
Ser Glu Gly Glu Gln Lys Arg Leu Glu Glu Tyr Glu Asn Asn Gln Pro
              245                 250                 255
Gln Val Lys Asn Gln Ile His Ser Arg Asp Asp Leu Asp Asp Ile Ile
              260                 265                 270
Gln Ser Ser Gln Thr Val Ser Glu Asp Gly Asp Ser Leu Cys Cys Asn
         275                 280                 285
Cys Lys Asn Val Ile Leu Leu Ile Asp Gln His Glu Met Lys Cys Lys
         290                 295                 300
Asp Cys Val His Leu Leu Lys Ile Lys Lys Thr Phe Cys Leu Cys Lys
305                 310                 315                 320
Arg Leu Thr Glu Leu Lys Asp Asn His Cys Glu Gln Leu Arg Val Lys
              325                 330                 335
Ile Arg Lys Leu Lys Asn Lys Ala Ser Val Leu Gln Lys Arg Leu Ser
         340                 345                 350
Glu Lys Glu Glu Ile Lys Ser Gln Leu Lys His Glu Thr Leu Glu Leu
     355                 360                 365
Glu Lys Glu Leu Cys Ser Leu Arg Phe Ala Ile Gln Gln
     370                 375                 380 381
```

411

```
<210> 750
<211> 296
<212> Amino acid
<213> Homo sapiens
```

```
<400> 750
Ser Pro Leu Arg Tyr Arg Ala Gly Gln Ser Gly Ser Thr Ile Ser Ser
1               5                   10                  15
Ser Ser Cys Ala Met Trp Arg Cys Gly Gly Arg Gln Gly Leu Cys Val
            20                  25                  30
Leu Arg Arg Leu Ser Gly Gly His Ala His His Arg Ala Trp Arg Trp
        35                  40                  45
Asn Ser Asn Arg Ala Cys Glu Arg Ala Leu Gln Tyr Lys Leu Gly Asp
        50                  55                  60
Lys Ile His Gly Phe Thr Val Asn Gln Val Thr Ser Val Pro Glu Leu
65                  70                  75                  80
Phe Leu Thr Ala Val Lys Leu Thr His Asp Asp Thr Gly Ala Arg Tyr
            85                  90                  95
Leu His Leu Ala Arg Glu Asp Thr Asn Asn Leu Phe Ser Val Gln Phe
            100                 105                 110
Arg Thr Thr Pro Met Asp Ser Thr Gly Val Pro His Ile Leu Glu His
        115                 120                 125
Thr Val Leu Cys Gly Ser Gln Lys Tyr Pro Cys Arg Asp Pro Phe Phe
    130                 135                 140
Lys Met Leu Asn Arg Ser Leu Ser Thr Phe Met Asn Ala Phe Thr Ala
145                 150                 155                 160
Ser Asp Tyr Thr Leu Tyr Pro Phe Ser Thr Gln Asn Pro Lys Asp Phe
                165                 170                 175
Gln Asn Leu Leu Ser Val Tyr Leu Asp Ala Thr Phe Phe Pro Cys Leu
            180                 185                 190
Arg Glu Leu Asp Phe Trp Gln Glu Gly Trp Arg Leu Glu His Glu Asn
        195                 200                 205
Pro Ser Asp Pro Gln Thr Pro Leu Val Phe Lys Gly Val Val Phe Asn
    210                 215                 220
Glu Met Lys Gly Ala Phe Thr Asp Asn Glu Arg Ile Phe Ser Gln His
225                 230                 235                 240
Leu Gln Asn Arg Leu Leu Pro Asp His Thr Tyr Ser Val Val Ser Gly
            245                 250                 255
Gly Asp Pro Leu Cys Ile Pro Glu Leu Thr Trp Glu Gln Leu Lys Gln
            260                 265                 270
Phe His Ala Thr His Tyr His Pro Ser Asn Ala Arg Phe Phe Thr Tyr
        275                 280                 285
Gly Asn Phe Pro Leu Asp Gln His
290                 295 296
```

```
<210> 751
<211> 163
<212> Amino acid
<213> Homo sapiens
```

```
<400> 751
Arg Gly Ala Lys Ala Lys Ser Ala Val Leu Pro Pro Gly Pro Pro Cys
1               5                   10                  15
Ser Ser Ile Leu Ile Leu Ser Pro Pro Ala Pro Leu Thr Pro Arg Ser
```

```
              20                      25                      30
Pro Gly Thr Glu Ala Thr Arg Pro Thr Ala Met Ser Lys Ser Leu Lys
          35                      40                      45
Lys Lys Ser His Trp Thr Ser Lys Val His Glu Ser Val Ile Gly Arg
      50                      55                      60
Asn Pro Glu Gly Gln Leu Gly Phe Glu Leu Lys Gly Gly Ala Glu Asn
65                      70                      75                      80
Gly Gln Phe Pro Tyr Leu Gly Glu Val Lys Pro Gly Lys Val Ala Tyr
              85                      90                      95
Glu Ser Gly Ser Lys Leu Val Ser Glu Glu Leu Leu Leu Glu Val Asn
          .100                     105                     110
Glu Thr Pro Val Ala Gly Leu Thr Ile Arg Asp Val Leu Ala Val Ile
      115                     120                     125
Lys His Cys Lys Asp Pro Leu Arg Leu Lys Cys Val Lys Gln Gly Glu
      130                     135                     140
Ser Ser Gly Leu Leu Ser Val Leu Pro Gly Gly Gly Thr Ala Arg Gly
145                     150                     155                     160
Ala Gly Gln
      163


        <210> 752
        <211> 99
        <212>Amino acid
        <213> Homo sapiens




        <400> 752
Ser His Arg Pro Gln Pro Asp Ala Trp Arg Gln Gly Asn Ala Phe Gln
1                       5                       10                      15
Cys Val Gln Lys Glu Lys Met Gln Val Ser Ser Ala Glu Val Arg Ile
          20                      25                      30
Gly Pro Met Arg Leu Thr Gln Asp Pro Ile Gln Val Leu Leu Ile Phe
          35                      40                      45
Ala Lys Glu Asp Ser Gln Ser Asp Gly Phe Trp Trp Ala Cys Asp Arg
      50                      55                      60
Ala Gly Tyr Arg Cys Asn Ile Ala Arg Thr Pro Glu Ser Ala Leu Glu
65                      70                      75                      80
Cys Phe Leu Asp Lys His His Glu Ile Ile Val Ile Asp His Arg Gln
              85                      90                      95
Thr Gln Asn
          99


        <210> 753
        <211> 193
        <212>Amino acid
        <213> Homo sapiens




        <400> 753
Phe Arg Leu Ala Gly Cys Gly His Leu Leu Val Ser Leu Leu Gly Leu
1                       5                       10                      15
Leu Leu Leu Leu Ala Arg Ser Gly Thr Arg Ala Leu Val Cys Leu Pro
          20                      25                      30
Cys Asp Glu Ser Lys Cys Glu Glu Pro Arg Asn Cys Pro Gly Ser Ile
      35                      40                      45
Val Gln Gly Val Cys Gly Cys Cys Tyr Thr Cys Ala Ser Gln Arg Asn
```

```
             50                      55                     60
Glu Ser Cys Gly Gly Thr Phe Gly Ile Tyr Gly Thr Cys Asp Arg Gly
65                      70                     75                     80
Leu Arg Cys Val Ile Arg Pro Pro Leu Asn Gly Asp Ser Leu Thr Glu
                   85                     90                     95
Tyr Glu Ala Gly Val Cys Glu Asp Glu Asn Trp Thr Asp Asp Gln Leu
              100                    105                    110
Leu Gly Phe Lys Pro Cys Asn Glu Asn Leu Ile Ala Gly Cys Asn Ile
         115                    120                    125
Ile Asn Gly Lys Cys Glu Cys Asn Thr Ile Arg Thr Cys Ser Asn Pro
    130                    135                    140
Phe Glu Phe Pro Ser Gln Asp Met Cys Leu Ser Ala Leu Lys Arg Ile
145                    150                    155                    160
Glu Glu Glu Lys Pro Asp Cys Ser Lys Ala Arg Cys Glu Val Gln Phe
              165                    170                    175
Ser Pro Arg Cys Pro Glu Asp Ser Val Leu Ile Glu Gly Tyr Ala Pro
         180                    185                    190
Pro
193
```

```
        <210> 754
        <211> 73
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 754
Phe Arg Met Ala Ala Asn Val Gly Ser Met Phe Gln Tyr Trp Lys Arg
1                   5                      10                     15
Phe Asp Leu Gln Gln Leu Gln Arg Glu Leu Asp Ala Thr Ala Thr Val
              20                     25                     30
Leu Ala Asn Arg Gln Asp Glu Ser Glu Gln Ser Arg Lys Arg Leu Ile
         35                     40                     45
Glu Gln Ser Arg Glu Phe Lys Lys Asn Thr Pro Glu Val Arg Arg Val
    50                     55                     60
Thr Ile Val Phe Ala Leu Lys Gly Ser
65                     70     73
```

```
        <210> 755
        <211> 83
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 755
Glu Thr Leu Ser Cys Arg Ile Met Asp His Pro Ser Arg Glu Lys Asp
1                   5                      10                     15
Glu Arg Gln Arg Thr Thr Lys Pro Met Ala Gln Arg Ser Ala His Cys
              20                     25                     30
Ser Arg Pro Ser Gly Ser Ser Ser Ser Gly Val Leu Met Val Gly
         35                     40                     45
Pro Asn Phe Arg Val Gly Lys Lys Ile Gly Cys Gly Asn Phe Gly Glu
    50                     55                     60
Leu Arg Leu Gly Glu Gly Leu Pro Gln Val Tyr Tyr Phe Gly Pro Cys
65                     70                     75                     80
Gly Lys Tyr
```

83

```
<210> 756
<211> 100
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(100)
<223> X = any amino acid or stop code
```

```
<400> 756
Gly Cys Cys Lys Asp Xaa His Ser Gly Val Ile Gly Arg Ser Trp Ala
1               5                   10                  15
Met Leu Phe Ala Ser Gly Gly Phe Gln Val Lys Leu Tyr Asp Ile Glu
            20                  25                  30
Gln Gln Gln Ile Arg Asn Ala Leu Glu Asn Ile Arg Trp Ala Ser Arg
        35                  40                  45
Arg Ser Pro Glu Gly Met Glu Val Gly Leu Phe Leu Ser Val Gly Leu
    50                  55                  60
Val Cys His Ile Leu Lys Ala Met Arg Ile Cys Asp Val Thr Phe Ser
65                  70                  75                  80
Ser Asp Gly Tyr Cys Ser Ala Ser Glu Leu Val Lys Ala Arg Pro Thr
                85                  90                  95
Val Ala Gly Met
            100
```

```
<210> 757
<211> 130
<212> Amino acid
<213> Homo sapiens
```

```
<400> 757
Asn Ser Arg Val Asp Asp Phe Val Ser Ala Arg Pro Lys Pro Arg Pro
1               5                   10                  15
Leu Pro Arg Ala Arg Gly Met Val Val Val Thr Gly Arg Glu Pro Asp
            20                  25                  30
Ser Arg Arg Gln Asp Gly Ala Met Ser Ser Ser Asp Ala Glu Asp Asp
        35                  40                  45
Phe Leu Glu Pro Ala Thr Pro Thr Ala Thr Gln Ala Gly His Ala Leu
    50                  55                  60
Pro Pro Ala Ala Thr Gly Ser Phe Leu Arg Leu Phe Pro Leu Thr Ser
65                  70                  75                  80
Glu Gly Leu Thr Ser Leu His Ala Cys Pro His Cys Gly Ala Thr Lys
                85                  90                  95
Thr Pro Cys Trp Gln Pro Cys Ser Val Gly Gly Thr Thr Ser Pro Arg
            100                 105                 110
Thr Pro Arg Ala Gly Thr Ser Ser Thr Glu Met Ala His Thr Leu Glu
        115                 120                 125
Met Cys
    130
```

```
<210> 758
<211> 121
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 758
Arg Ala Leu Trp Val Gly Gly Cys Ser Gly Glu Ala Cys Gly Ile Gly
 1               5                  10                  15
Met Ser Gly Leu Leu Thr Asp Pro Glu Gln Arg Ala Gln Glu Pro Arg
            20                  25                  30
Tyr Pro Gly Phe Val Leu Gly Leu Asp Val Gly Ser Ser Val Ile Arg
        35                  40                  45
Cys His Val Tyr Asp Arg Ala Ala Arg Val Cys Gly Ser Ser Val Gln
        50                  55                  60
Lys Val Glu Asn Leu Tyr Pro Gln Ile Gly Trp Val Glu Ile Asp Pro
65                  70                  75                  80
Asp Val Leu Trp Ile Gln Phe Val Ala Val Ile Lys Glu Ala Val Lys
                85                  90                  95
Ala Ala Gly Ile Gln Met Asn Gln Ile Val Gly Leu Gly Ile Ser Thr
            100                 105                 110
Gln Arg Ala Thr Phe Ile Thr Trp Asn
        115                 120 121
```

```
        <210> 759
        <211> 210
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 759
Gly Leu Ala Ala Glu Gln Ser Met Gln Phe Val Lys Leu Trp Cys Gly
 1               5                  10                  15
Cys Ser Gly Glu Phe Pro Thr Arg Leu Arg Arg Arg Thr Pro Leu Thr
            20                  25                  30
Glu Ala Met Glu Gly Gly Pro Ala Val Cys Cys Gln Asp Pro Arg Ala
        35                  40                  45
Glu Leu Val Glu Arg Val Ala Ala Ile Asp Val Thr His Leu Glu Glu
    50                  55                  60
Ala Asp Gly Gly Pro Glu Pro Thr Arg Asn Gly Val Asp Pro Pro Pro
65                  70                  75                  80
Arg Ala Arg Ala Ala Ser Val Ile Pro Gly Ser Thr Ser Arg Leu Leu
                85                  90                  95
Pro Ala Arg Pro Ser Leu Ser Ala Arg Lys Leu Ser Leu Gln Glu Arg
            100                 105                 110
Pro Ala Gly Ser Tyr Leu Glu Ala Gln Ala Gly Pro Tyr Ala Thr Gly
        115                 120                 125
Pro Ala Ser His Ile Ser Pro Arg Ala Trp Arg Arg Pro Thr Ile Glu
        130                 135                 140
Ser His His Val Ala Ile Ser Asp Ala Glu Asp Cys Val Gln Leu Asn
145                 150                 155                 160
Gln Tyr Lys Leu Gln Ser Glu Ile Gly Lys Gly Ala Tyr Gly Val Val
            165                 170                 175
Arg Leu Ala Tyr Asn Glu Ser Glu Asp Arg His Tyr Ala Met Lys Val
        180                 185                 190
Leu Ser Lys Lys Lys Leu Leu Lys Gln Tyr Gly Phe Pro Arg Arg Pro
        195                 200                 205
```

Pro Pro
   210

       <210> 760
       <211> 172
       <212>Amino acid
       <213> Homo sapiens

       <400> 760
Phe Val Tyr Gly Lys Pro Val Thr Leu Trp Pro Thr Ile Ser Ser Val
  1   5   10   15
Val Pro Ser Thr Phe Leu Gly Leu Gly Asn Tyr Glu Val Glu Val Glu
               20   25   30
Ala Glu Pro Asp Val Arg Gly Pro Glu Ile Val Thr Met Gly Glu Asn
           35   40   45
Asp Pro Pro Ala Val Glu Ala Pro Phe Ser Phe Arg Ser Leu Phe Gly
       50   55   60
Leu Asp Asp Leu Lys Ile Ser Pro Val Ala Pro Asp Ala Asp Ala Val
 65   70   75   80
Ala Ala Gln Ile Leu Ser Leu Leu Pro Leu Lys Phe Phe Pro Ile Ile
                   85   90   95
Val Ile Gly Ile Ile Ala Leu Ile Leu Ala Leu Ala Ile Gly Leu Gly
               100   105   110
Ile His Phe Asp Cys Ser Gly Lys Tyr Arg Cys Arg Ser Ser Phe Lys
           115   120   125
Cys Ile Glu Leu Ile Ala Arg Cys Asp Gly Val Ser Asp Cys Lys Asp
       130   135   140
Gly Glu Asp Glu Tyr Arg Cys Val Arg Val Gly Gly Gln Asn Ala Ala
145   150   155   160
Leu Gln Val Phe Thr Ala Ala Ser Arg Lys Thr Met
                   165   170   172

       <210> 761
       <211> 104
       <212>Amino acid
       <213> Homo sapiens

       <400> 761
Ser Leu Ala Met Pro Phe Gly Cys Val Thr Leu Gly Asp Lys Lys Asn
  1   5   10   15
Tyr Asn Gln Pro Ser Glu Val Thr Asp Arg Tyr Asp Leu Gly Gln Val
               20   25   30
Ile Lys Thr Glu Glu Phe Cys Glu Ile Phe Arg Ala Lys Asp Lys Thr
           35   40   45
Thr Gly Lys Leu His Thr Cys Lys Lys Phe Gln Lys Arg Asp Gly Arg
       50   55   60
Lys Val Arg Lys Ala Ala Lys Asn Glu Ile Gly Ile Leu Lys Met Val
 65   70   75   80
Lys His Pro Asn Ile Leu Gln Leu Val Asp Val Phe Val Thr Arg Lys
                   85   90   95
Glu Tyr Phe Ile Phe Leu Glu Leu
               100   104

                              417

<210> 762
<211> 249
<212>Amino acid
<213> Homo sapiens

<400> 762
```
Gln Arg Arg Arg Phe Arg Ala Gly Leu Trp Gly Gly His Gly Leu Thr
1               5               10              15
Asp Gly Leu Arg Arg Asn Gly Gly Cys Gly Cys Ser Ala Arg Val Pro
            20              25              30
Arg Val Gly Glu Arg Leu Arg Gly His Arg Cys Pro Asp Pro Leu Cys
        35              40              45
Leu Leu Leu Asp Met Leu Phe Leu Ser Phe His Ala Gly Ser Trp Glu
    50              55              60
Ser Trp Cys Cys Cys Cys Leu Ile Pro Ala Asp Arg Pro Trp Asp Arg
65              70              75              80
Gly Gln His Trp Gln Leu Glu Met Ala Asp Thr Arg Ser Val His Glu
            85              90              95
Thr Arg Phe Glu Ala Ala Val Lys Val Ile Gln Ser Leu Pro Lys Asn
        100             105             110
Gly Ser Phe Gln Pro Thr Asn Glu Met Met Leu Lys Phe Tyr Ser Phe
    115             120             125
Tyr Lys Gln Ala Thr Glu Gly Pro Cys Lys Leu Ser Arg Pro Gly Phe
    130             135             140
Trp Asp Pro Ile Gly Arg Tyr Lys Trp Asp Ala Trp Ser Ser Leu Gly
145             150             155             160
Asp Met Thr Lys Glu Glu Ala Met Ile Ala Tyr Val Glu Glu Met Lys
            165             170             175
Lys Ile Ile Glu Thr Met Pro Met Thr Glu Lys Val Glu Glu Leu Leu
            180             185             190
Arg Val Ile Gly Pro Phe Tyr Glu Ile Val Glu Asp Lys Lys Ser Gly
    195             200             205
Arg Ser Ser Asp Ile Thr Ser Asp Leu Gly Asn Val Leu Thr Ser Thr
210             215             220
Pro Asn Ala Lys Thr Val Asn Gly Lys Ala Glu Ser Ser Asp Ser Gly
225             230             235             240
Ala Glu Ser Glu Glu Glu Glu Ala Cys
            245             249
```


<210> 763
<211> 184
<212>Amino acid
<213> Homo sapiens

<400> 763
```
Ser Cys Phe Lys Gly Arg Thr Gly Gly Arg Ser Gly Ser Ser Gly Asp
1               5               10              15
Ser Ser Arg Trp Ala Arg Cys Gly Arg His Phe Ser Ala Ser Thr Glu
            20              25              30
Glu Pro Pro Leu Ser Gln Pro Cys Ser Ala Leu Pro Arg Ser Gly Arg
        35              40              45
Arg Gly Cys Ala Val Pro Ser Ser Val Thr Lys Met Leu Ser Phe Phe
    50              55              60
Arg Arg Thr Leu Gly Arg Ser Met Arg Lys His Ala Glu Lys Glu
65              70              75              80
```

```
Arg Leu Arg Glu Ala Gln Arg Ala Ala Thr His Ile Pro Ala Ala Gly
                 85                      90                      95
Asp Ser Lys Ser Ile Ile Thr Cys Arg Val Ser Leu Leu Asp Gly Thr
            100                     105                 110
Asp Val Ser Val Asp Leu Pro Lys Lys Ala Lys Gly Gln Glu Leu Phe
        115                 120                 125
Asp Gln Ile Met Tyr His Leu Asp Leu Ile Glu Ser Asp Tyr Phe Gly
    130                 135                 140
Leu Arg Phe Met Asp Ser Ala Gln Val Ala His Trp Leu Asp Gly Thr
145                 150                 155                 160
Lys Ser Ile Lys Lys Gln Val Lys Ile Gly Ser Pro Tyr Cys Leu His
                165                 170                 175
Leu Arg Val Lys Phe Tyr Ser Ser
                180         184
```

```
<210> 764
<211> 138
<212>Amino acid
<213> Homo sapiens
```

```
<400> 764
Glu Ser Arg Glu Arg Ser Gly Asn Arg Arg Gly Ala Glu Asp Arg Gly
1               5                   10                  15
Thr Cys Gly Leu Gln Ser Pro Ser Ala Met Leu Gly Ala Lys Pro His
            20                  25                  30
Trp Leu Pro Gly Pro Leu His Ser Pro Gly Leu Pro Leu Val Leu Val
        35                  40                  45
Leu Leu Ala Leu Gly Ala Gly Trp Ala Gln Glu Gly Ser Glu Pro Val
    50                  55                  60
Leu Leu Glu Gly Glu Cys Leu Val Val Cys Glu Pro Gly Arg Ala Ala
65                  70                  75                  80
Ala Gly Gly Pro Gly Gly Ala Ala Leu Gly Glu Ala Pro Pro Gly Arg
                85                  90                  95
Val Ala Phe Ala Ala Val Arg Ser His His His Glu Pro Ala Gly Glu
            100                 105                 110
Thr Gly Asn Gly Thr Ser Gly Ala Ile Tyr Phe Asp Gln Val Leu Val
        115                 120                 125
Asn Glu Gly Gly Gly Phe Asp Arg Ala Ser
130                 135         138
```

```
<210> 765
<211> 168
<212>Amino acid
<213> Homo sapiens
```

```
<400> 765
Glu Asp Val Lys Ser Tyr Tyr Thr Val His Leu Pro Gln Leu Glu Asn
1               5                   10                  15
Ile Asn Ser Gly Glu Thr Arg Thr Ile Ser His Phe His Tyr Thr Thr
            20                  25                  30
Trp Pro Asp Phe Gly Val Pro Gln Ser Pro Ala Ser Phe Leu Asn Phe
        35                  40                  45
Leu Phe Lys Val Arg Glu Ser Gly Ser Leu Asn Pro Asp His Gly Pro
    50                  55                  60
```

419

```
Val Val Ile His Arg Ser Ala Gly Thr Gly Arg Ser Ser Thr Phe Ser
65                  70                  75                  80
Val Val His Thr Cys Leu Val Leu Met Glu Lys Gly Asp Asp Ile Asn
                85                  90                  95
Ile Lys Gln Val Leu Leu Asn Ile Arg Lys Phe Gln Met Gly Leu Ile
            100                 105                 110
Gln Thr Pro Asp Gln Leu Arg Phe Ser Tyr Met Ala Ile Thr Glu Gly
        115                 120                 125
Ala Lys Cys Val Lys Gly Asp Ser Ser Ile Gln Lys Arg Trp Lys Glu
    130                 135                 140
Leu Ser Lys Glu Asp Leu Pro Pro Ala Phe Asp His Ser Pro Asn Lys
145                 150                 155                 160
Ile Met Thr Glu Lys Tyr Asn Arg
                165         168
```

```
<210> 766
<211> 255
<212>Amino acid
<213> Homo sapiens
```

```
<400> 766
Leu Asn Arg Gln Arg Cys Gly Asp Gln Val Leu Val Pro Gly Thr Gly
1               5                   10                  15
Leu Ala Ala Ile Leu Arg Thr Leu Pro Met Phe His Asp Glu Glu His
            20                  25                  30
Ala Arg Ala Arg Gly Leu Ser Glu Asp Thr Leu Val Leu Pro Pro Ala
        35                  40                  45
Ser Arg Asn Gln Arg Ile Leu Tyr Thr Val Leu Glu Cys Gln Pro Leu
    50                  55                  60
Phe Asp Ser Ser Asp Met Thr Ile Ala Glu Trp Val Cys Leu Ala Gln
65                  70                  75                  80
Thr Ile Lys Arg His Tyr Glu Gln Tyr His Gly Phe Val Val Ile His
                85                  90                  95
Gly Thr Asp Thr Met Ala Phe Ala Ala Ser Met Leu Ser Phe Met Leu
            100                 105                 110
Glu Asn Leu Gln Lys Thr Val Ile Leu Thr Gly Ala Gln Val Pro Ile
        115                 120                 125
His Ala Leu Trp Ser Asp Gly Arg Glu Asn Leu Leu Gly Ala Leu Leu
    130                 135                 140
Met Ala Gly Gln Tyr Val Ile Pro Glu Val Cys Leu Phe Phe Gln Asn
145                 150                 155                 160
Gln Leu Phe Arg Gly Asn Arg Ala Thr Lys Val Asp Ala Arg Arg Phe
                165                 170                 175
Ala Ala Phe Cys Ser Pro Asn Leu Leu Pro Leu Ala Thr Val Gly Ala
                180                 185                 190
Asp Ile Thr Ile Asn Arg Glu Leu Val Arg Lys Val Asp Gly Lys Ala
        195                 200                 205
Gly Leu Val Val His Ser Ser Met Glu Gln Asp Val Gly Leu Leu Arg
    210                 215                 220
Leu Tyr Pro Gly Ile Pro Ala Ala Leu Val Arg Ala Phe Leu Gln Pro
225                 230                 235                 240
Pro Leu Lys Gly Val Val Met Glu Thr Phe Gly Ser Gly Asn Gly
            245                 250                 255
```

```
<210> 767
<211> 260
<212>Amino acid
<213> Homo sapiens
```

```
<400> 767
Leu Phe Arg Leu Ala Pro Gly Phe Leu Arg Ser Leu Ala Arg Gln Gly
1               5                   10                  15
Tyr His Gln Ile Trp Ala Phe Pro Phe Leu Pro Ser Gly Ala Thr Ala
            20                  25                  30
Thr Trp Pro Ala Ala Ser Arg Ser Arg Ser Leu Ala Ala Arg Ser Leu
        35                  40                  45
Pro Arg Ser Pro Ala Arg Pro Gly Pro Asn Asp Ala Leu Leu Gly Glu
    50                  55                  60
His Asp Phe Arg Gly Gln Gly Val Arg Ala Gln Arg Phe Arg Phe Ser
65                  70                  75                  80
Glu Glu Pro Gly Pro Gly Ala Asp Gly Ala Val Leu Glu Val His Val
            85                  90                  95
Pro Gln Ile Gly Ala Gly Val Ser Leu Pro Gly Ile Leu Ala Ala Lys
            100                 105                 110
Cys Gly Ala Glu Val Ile Leu Ser Asp Ser Ser Glu Leu Pro His Cys
        115                 120                 125
Leu Glu Val Cys Arg Gln Ser Cys Gln Met Asn Asn Leu Pro His Leu
    130                 135                 140
Gln Val Val Gly Leu Thr Trp Gly His Ile Ser Trp Asp Leu Leu Ala
145                 150                 155                 160
Leu Pro Pro Gln Asp Ile Ile Leu Ala Ser Asp Val Phe Phe Glu Pro
            165                 170                 175
Glu Asp Phe Glu Asp Ile Leu Ala Thr Ile Tyr Phe Leu Met His Lys
            180                 185                 190
Asn Pro Lys Val Gln Leu Trp Ser Thr Tyr Gln Val Arg Ser Ala Asp
    195                 200                 205
Trp Ser Leu Glu Ala Leu Leu Tyr Lys Trp Asp Met Lys Cys Val His
    210                 215                 220
Ile Pro Leu Glu Ser Phe Asp Ala Asp Lys Glu Asp Ile Ala Glu Ser
225                 230                 235                 240
Thr Leu Pro Gly Arg His Thr Val Glu Met Leu Val Ile Ser Phe Ala
            245                 250                 255
Lys Asp Ser Leu
            260


<210> 768
<211> 200
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(200)
<223> X = any amino acid or stop code



<400> 768
Ser Phe Ile Tyr Lys His Thr His Arg Ala Arg Phe Gly Pro Arg Ala
1               5                   10                  15
Ile Val Ala Ser Pro Ala Leu Thr Ala Gly Pro His Val Ser Leu Thr
            20                  25                  30
Ala Ser Cys Arg Val Gly Met Trp Val Ser Cys Ser Pro Ser Pro Phe
        35                  40                  45
Leu His Pro Thr Asn Thr Leu Val Ala Val Leu Glu Arg Asp Thr Leu
```

```
        50                    55                    60
Gly Ile Arg Glu Val Arg Leu Phe Asn Ala Val Val Arg Trp Ser Glu
 65                    70                    75                    80
Ala Glu Cys Gln Arg Gln Gln Leu Gln Val Thr Pro Glu Asn Arg Arg
                   85                    90                    95
Lys Val Leu Gly Lys Ala Leu Gly Leu Ile Arg Phe Pro Leu Met Thr
                  100                   105                   110
Ile Glu Glu Phe Ala Ala Gly Asn Arg Ala Arg Ala Gln Gly Leu Val
                  115                   120                   125
Trp Glu Gly Ser Gly Thr Gln Val Gly Ile Trp Cys Thr Glu Asp Ser
         130                   135                   140
Ala Pro Glu Phe Thr Ala Glu Ser Leu Ala Asp Ala Trp His Ile Gln
145                   150                   155                   160
Ile Gly Arg Asn Leu Ala Cys Glu Asp Ala Ser Thr Trp Ala Ile Cys
                  165                   170                   175
Xaa Pro Arg Pro Gly Ser Val Pro Thr Val His Thr Ala Arg Pro Arg
                  180                   185                   190
Leu Ser Cys Leu Ser Ser Cys Phe
         195                   200
```

```
    <210> 769
    <211> 33
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(33)
    <223> X = any amino acid or stop code
```

```
    <400> 769
Met Ala Ser Thr Gln Asp Ala Glu Leu Ala Val Ser Arg Xaa Arg Ala
 1                5                    10                    15
Ile Ala Leu Xaa Pro Gly Xaa Gln Ser Xaa Xaa Pro Ser Gln Lys Lys
                  20                    25                    30
Lys
 33
```

```
    <210> 770
    <211> 599
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 770
Leu Leu Lys Ser Cys Gly Val Leu Leu Ser Gly Val Cys Ile Pro Cys
 1                5                    10                    15
Glu Gly Lys Gly Pro Thr Val Leu Val Ile Gln Thr Ala Val Pro Gln
                  20                    25                    30
Asp Arg Pro Thr Lys Ser Ser Met Arg Ser Ala Ala Lys Pro Trp Asn
         35                    40                    45
Pro Ala Ile Arg Ala Gly Gly His Gly Pro Asp Arg Val Arg Pro Leu
    50                    55                    60
Pro Ala Ala Ser Ser Gly Met Lys Ser Ser Lys Ser Ser Thr Ser Leu
 65                    70                    75                    80
```

```
Ala Phe Glu Ser Arg Leu Ser Arg Leu Lys Arg Ala Ser Ser Glu Asp
                  85                  90                  95
Thr Leu Asn Lys Pro Gly Ser Thr Ala Ala Ser Gly Val Val Arg Leu
             100             105             110
Lys Lys Thr Ala Thr Ala Gly Ala Ile Ser Glu Leu Thr Glu Ser Arg
         115             120             125
Leu Arg Ser Gly Thr Gly Ala Phe Thr Thr Thr Lys Arg Thr Gly Ile
     130             135             140
Pro Ala Pro Arg Glu Phe Ser Val Thr Val Ser Arg Glu Arg Ser Val
145             150             155             160
Pro Arg Gly Pro Ser Asn Pro Arg Lys Ser Val Ser Ser Pro Thr Ser
             165             170             175
Ser Asn Thr Pro Thr Pro Thr Lys His Leu Arg Thr Pro Ser Thr Lys
         180             185             190
Pro Lys Gln Glu Asn Glu Gly Gly Glu Lys Val Arg Leu Ser Pro Lys
     195             200             205
Phe Arg Glu Leu Leu Ala Glu Ala Lys Ala Lys Asp Ser Glu Ile Asn
210             215             220
Arg Leu Arg Ser Glu Leu Lys Lys Tyr Lys Glu Lys Arg Thr Leu Asn
225             230             235             240
Ala Glu Gly Thr Asp Ala Leu Gly Pro Asn Val Asp Gly Thr Ser Val
             245             250             255
Ser Pro Gly Asp Thr Glu Pro Met Ile Arg Ala Leu Glu Glu Lys Asn
             260             265             270
Lys Asn Phe Gln Lys Glu Leu Ser Asp Leu Glu Glu Glu Asn Arg Val
             275             280             285
Leu Lys Glu Lys Leu Ile Tyr Leu Glu His Ser Pro Asn Ser Glu Gly
     290             295             300
Ala Ala Ser His Thr Gly Asp Ser Ser Cys Pro Thr Ser Ile Thr Gln
305             310             315             320
Glu Ser Ser Phe Gly Ser Pro Thr Gly Asn Gln Leu Ser Ser Asp Ile
             325             330             335
Asp Glu Tyr Lys Lys Asn Ile His Gly Asn Ala Leu Arg Thr Ser Gly
         340             345             350
Ser Ser Ser Ser Asp Val Thr Lys Ala Ser Leu Ser Pro Asp Ala Ser
     355             360             365
Asp Phe Glu His Ile Thr Ala Glu Thr Pro Ser Arg Pro Leu Ser Ser
370             375             380
Thr Ser Asn Pro Phe Lys Ser Ser Lys Cys Ser Thr Ala Gly Ser Ser
385             390             395             400
Pro Asn Ser Val Ser Glu Leu Ser Leu Ala Ser Leu Thr Glu Lys Ile
             405             410             415
Gln Lys Met Glu Glu Asn His His Ser Thr Ala Glu Glu Leu Gln Ala
         420             425             430
Thr Leu Gln Glu Leu Ser Asp Gln Gln Gln Met Val Gln Glu Leu Thr
     435             440             445
Ala Glu Asn Glu Lys Leu Val Asp Glu Lys Thr Ile Leu Glu Thr Ser
     450             455             460
Phe His Gln His Arg Glu Arg Ala Glu Gln Leu Ser Gln Glu Asn Glu
465             470             475             480
Lys Leu Met Asn Leu Leu Gln Glu Arg Val Lys Asn Glu Glu Pro Thr
             485             490             495
Thr Gln Glu Gly Lys Ile Ile Glu Leu Glu Gln Lys Cys Thr Gly Ile
         500             505             510
Leu Glu Gln Gly Arg Phe Glu Arg Glu Lys Leu Leu Asn Ile Gln Gln
     515             520             525
Gln Leu Thr Cys Ser Leu Arg Lys Val Glu Glu Glu Asn Gln Gly Ala
     530             535             540
Leu Glu Met Ile Lys Arg Leu Lys Glu Glu Asn Glu Lys Leu Asn Glu
545             550             555             560
Phe Leu Glu Leu Glu Arg His Asn Asn Asn Met Met Ala Lys Thr Leu
             565             570             575
Glu Glu Cys Arg Val Thr Leu Glu Gly Leu Lys Met Glu Asn Gly Ser
         580             585             590
```

423

Leu Lys Ser His Leu Gln Gly
     595   599

        <210> 771
        <211> 103
        <212>Amino acid
        <213> Homo sapiens

        <400> 771
Ser Gln Met His Arg Leu Ile Phe Val Tyr Thr Leu Ile Cys Ala Asn
 1   5   10   15
Phe Cys Ser Cys Arg Asp Thr Ser Ala Thr Pro Gln Ser Ala Ser Ile
            20   25   30
Lys Ala Leu Arg Asn Ala Asn Leu Arg Arg Asp Glu Ser Asn His Leu
        35   40   45
Thr Asp Leu Tyr Arg Arg Asp Glu Thr Ile Gln Val Lys Gly Asn Gly
    50   55   60
Tyr Val Gln Ser Pro Arg Phe Pro Asn Ser Tyr Pro Arg Asn Leu Leu
65   70   75   80
Leu Thr Trp Arg Leu His Ser Gln Glu Asn Thr Arg Ile Gln Leu Val
                85   90   95
Phe Asp Asn Gln Phe Gly Leu
            100   103

        <210> 772
        <211> 218
        <212>Amino acid
        <213> Homo sapiens

        <400> 772
Pro Phe Lys Lys Met Thr Asp Leu Leu Arg Ser Val Val Thr Val Ile
 1   5   10   15
Asp Val Phe Tyr Lys Tyr Thr Lys Gln Asp Gly Glu Cys Gly Thr Leu
            20   25   30
Ser Lys Gly Glu Leu Lys Glu Leu Leu Glu Lys Glu Leu His Pro Val
        35   40   45
Leu Lys Asn Pro Asp Asp Pro Asp Thr Val Asp Val Ile Met His Met
    50   55   60
Leu Asp Arg Asp His Asp Arg Arg Leu Asp Phe Thr Glu Phe Leu Leu
65   70   75   80
Met Ile Phe Lys Leu Thr Met Ala Cys Asn Lys Val Leu Ser Lys Glu
                85   90   95
Tyr Cys Lys Ala Ser Gly Ser Lys Lys His Arg Arg Gly His Arg His
            100   105   110
Gln Glu Glu Glu Ser Glu Thr Glu Glu Asp Glu Glu Asp Thr Pro Gly
        115   120   125
His Lys Ser Gly Tyr Arg His Ser Ser Trp Ser Glu Gly Glu Glu His
    130   135   140
Gly Tyr Ser Ser Gly His Ser Arg Gly Thr Val Lys Cys Arg His Gly
145   150   155   160
Ser Asn Ser Arg Arg Leu Gly Arg Gln Gly Asn Leu Ser Ser Ser Gly
                165   170   175
Asn Gln Glu Gly Ser Gln Lys Arg Tyr His Arg Ser Ser Cys Gly His
            180   185   190

424

```
Ser Trp Ser Gly Gly Lys Asp Arg His Gly Ser Ser Ser Val Glu Leu
        195                 200                 205
Arg Glu Arg Ile Asn Lys Ser His Ile Lys
    210                 215         218
```

```
<210> 773
<211> 130
<212>Amino acid
<213> Homo sapiens
```

```
<400> 773
Val Pro Lys Ile Ser Gly Pro Asp His Ile Asp Phe Ile Pro Trp Asp
1               5               10              15
Gln Leu Phe Met Ala Ser Ser Ser Val Thr Glu Phe Leu Val Leu
            20              25              30
Gly Phe Ser Ser Leu Gly Glu Leu Gln Leu Val Leu Phe Ala Val Phe
        35              40              45
Leu Cys Leu Tyr Leu Ile Ile Leu Ser Gly Asn Ile Ile Ile Ile Ser
    50              55              60
Val Ile His Leu Asp His Ser Leu His Thr Pro Met Tyr Phe Phe Leu
65              70              75              80
Gly Ile Leu Ser Ile Ser Glu Ile Phe Tyr Thr Thr Val Ile Leu Pro
            85              90              95
Lys Met Leu Ile Asn Leu Phe Ser Val Phe Arg Thr Leu Ser Phe Val
        100             105             110
Ser Cys Ala Thr Gln Met Phe Tyr Glu Ile Val Gly Pro Gly Thr Gln
    115             120             125
Glu Arg
    130
```

```
<210> 774
<211> 204
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(204)
<223> X = any amino acid or stop code
```

```
<400> 774
Asp His Ser Thr Glu Thr Pro Gly Ile Pro Ala Ala Glu Pro Val Ser
1               5               10              15
His Gly Thr Gly Lys Leu Glu Arg Ala Pro Thr Leu Pro Ala Gly Ala
        20              25              30
Glu Leu Pro Ala Pro Ala Ala Val Pro Cys Pro Thr Leu Xaa Val Cys
        35              40              45
Leu Tyr Pro Gln Leu Leu Gly Leu Ser Val Ala Thr Met Val Thr Leu
    50              55              60
Thr Tyr Phe Gly Ala His Phe Ala Val Ile Arg Arg Ala Ser Leu Glu
65              70              75              80
Lys Asn Pro Tyr Gln Ala Val His Gln Trp Gly Thr Gln Gln Arg Leu
        85              90              95
Ile Gln His Pro Glu Ser Gly Ser Glu Gly Gln Ser Leu Leu Gly Pro
```

```
                    100                    105                    110
   Leu Arg Ala Phe Ser Ala Gly Leu Ser Leu Val Gly Leu Leu Thr Leu
               115                    120                    125
   Gly Ala Val Leu Ser Ala Ala Ala Thr Val Arg Glu Ala Gln Gly Leu
       130                    135                    140
   Met Ala Gly Gly Phe Leu Cys Phe Ser Leu Ala Phe Cys Ala Gln Val
   145                    150                    155                    160
   Gln Val Val Phe Trp Arg Leu His Ser Pro Thr Gln Val Glu Asp Ala
                   165                    170                    175
   Met Leu Asp Thr Tyr Asp Leu Val Tyr Glu Gln Ala Met Lys Gly Thr
               .180                    185                    190
   Ser His Val Arg Arg Gln Glu Leu Ala Ala Ile Gln
               195                    200                    204
```

```
        <210> 775
        <211> 121
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 775
   Gln Pro Gly Tyr Ser Glu Tyr Asp Lys Asn Arg Gly Gln Gly Met Leu
   1                   5                    10                    15
   Leu Asn Met Met Cys Gly Arg Gln Leu Ser Ala Ile Ser Leu Cys Leu
                   20                    25                    30
   Ala Val Thr Phe Ala Pro Leu Phe Asn Ala Gln Ala Asp Glu Pro Glu
               35                    40                    45
   Val Ile Pro Gly Asp Ser Pro Val Ala Val Ser Glu Gln Gly Glu Ala
        50                    55                    60
   Leu Pro Gln Ala Gln Ala Thr Ala Ile Met Ala Gly Ile Gln Pro Leu
   65                    70                    75                    80
   Pro Glu Gly Ala Ala Glu Lys Ala Arg Thr Gln Ile Glu Ser Gln Leu
                   85                    90                    95
   Pro Ala Gly Tyr Lys Pro Val Tyr Leu Asn Gln Leu Gln Leu Leu Tyr
                   100                    105                    110
   Ala Ala Arg Gly Ile Ser Cys Ser Val
               115                    120 121
```

```
        <210> 776
        <211> 142
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 776
   Arg Thr Arg Ala Ala Asp Val Tyr Val Phe Ser Leu Thr Gly Lys Ser
   1                   5                    10                    15
   Arg Asn Val Ser Ser Ser Thr Val Arg Arg Ser Ala Val Gly Gly Met
                   20                    25                    30
   Ser Ala Leu Ala Leu Phe Asp Leu Leu Lys Pro Asn Tyr Ala Leu Ala
               35                    40                    45
   Thr Gln Val Glu Phe Thr Asp Pro Glu Ile Val Ala Glu Tyr Ile Thr
       50                    55                    60
   Tyr Pro Ser Pro Asn Gly His Gly Glu Val Arg Gly Tyr Leu Val Lys
   65                    70                    75                    80
   Pro Ala Lys Met Ser Gly Lys Thr Pro Ala Val Val Val Val His Glu
```

```
                            85                    90                      95
Asn Arg Gly Leu Asn Pro Tyr Ile Glu Asp Val Ala Arg Arg Val Ala
            100                     105                 110
Lys Ala Gly Tyr Ile Ala Leu Ala Pro Asp Gly Leu Ser Ser Val Gly
        115                     120                 125
Gly Tyr Pro Gly Asn Asp Ile Lys Val Val Ser Ala Ala Ala
        130                     135                 140     142
```

```
        <210> 777
        <211> 150
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 777
Val Lys Gln Arg His Gly Asn Ser Leu Leu Thr Thr Glu Thr Lys Cys
 1                   5                   10                  15
Ile Ser Cys Arg Leu Gly Val Pro Leu Ser Pro Gln Arg Arg Phe Gln
            20                  25                  30
Ala Ile Arg Ile Glu Glu Val Lys Leu Arg Trp Phe Ala Phe Leu Ile
        35                      40                  45
Val Leu Leu Ala Gly Cys Ser Ser Lys His Asp Tyr Thr Asn Pro Pro
    50                  55                  60
Trp Asn Ala Lys Val Pro Val Gln Arg Ala Met Gln Trp Met Pro Ile
 65                 70                  75                      80
Ser Gln Lys Ala Gly Ala Ala Trp Gly Val Asp Pro Gln Leu Ile Thr
            85                  90                  95
Ala Ile Ile Ala Ile Glu Ser Gly Gly Asn Pro Asn Ala Val Ser Lys
            100                 105                 110
Ser Asn Ala Ile Gly Leu Met Gln Leu Lys Ala Ser Thr Ser Gly Arg
        115                 120                 125
Asp Val Tyr Arg Arg Met Gly Trp Ser Gly Glu Pro Thr Thr Ser Glu
    130                 135                 140
Leu Lys Asn Ser Ser Arg
145                 150
```

```
        <210> 778
        <211> 296
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 778
His Ala Ala Gly Ile Arg His Glu Ala Lys Pro Lys Arg Ser Phe Tyr
 1                   5                   10                  15
Ala Ala Arg Asp Leu Tyr Lys Tyr Arg His Gln Tyr Pro Asn Phe Lys
            20                  25                  30
Asp Ile Arg Tyr Gln Asn Asp Leu Ser Asn Leu Arg Phe Tyr Lys Asn
        35                      40                  45
Lys Ile Pro Phe Lys Pro Asp Gly Val Tyr Ile Glu Glu Val Leu Ser
    50                  55                  60
Lys Trp Lys Gly Asp Tyr Glu Lys Leu Glu His Asn His Thr Tyr Ile
 65                 70                  75                      80
Gln Trp Leu Phe Pro Leu Arg Glu Gln Gly Leu Asn Phe Tyr Ala Lys
            85                  90                  95
Glu Leu Thr Thr Tyr Glu Ile Glu Glu Phe Lys Lys Thr Lys Glu Ala
```

```
                    100                    105                    110
Ile Arg Arg Phe Leu Leu Ala Tyr Lys Met Met Leu Glu Phe Phe Gly
        115                    120                    125
Ile Lys Leu Thr Asp Lys Thr Gly Asn Val Ala Arg Ala Val Asn Trp
        130                    135                    140
Gln Glu Arg Phe Gln His Leu Asn Glu Ser Gln His Asn Tyr Leu Arg
145                    150                    155                    160
Ile Thr Arg Ile Leu Lys Ser Leu Gly Glu Leu Gly Tyr Glu Ser Phe
                165                    170                    175
Lys Ser Pro Leu Val Lys Phe Ile Leu His Glu Ala Leu Val Glu Asn
        .180                    185                    190
Thr Ile Pro Asn Ile Lys Gln Ser Ala Leu Glu Tyr Phe Val Tyr Thr
        195                    200                    205
Ile Arg Asp Arg Arg Glu Arg Arg Lys Leu Leu Arg Phe Ala Gln Lys
210                    215                    220
His Tyr Thr Pro Ser Glu Asn Phe Ile Trp Gly Pro Pro Arg Lys Glu
225                    230                    235                    240
Gln Ser Glu Gly Ser Lys Ala Gln Lys Met Ser Ser Pro Leu Ala Ser
                245                    250                    255
Ser His Asn Ser Gln Thr Ser Met His Lys Lys Ala Lys Asp Ser Lys
        260                    265                    270
Asn Ser Ser Ser Ala Val His Leu Asn Ser Lys Thr Ala Glu Asp Lys
        275                    280                    285
Lys Val Ala Pro Lys Glu Pro Val
290                    295 296
```

```
        <210> 779
        <211> 90
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 779
Glu Leu Gln Val Phe Gln Pro Ile Gly Gly Met Ser Asp Ser Gly Ser
1                   5                   10                    15
Gln Leu Gly Ser Met Gly Ser Leu Thr Met Lys Ser Gln Leu Gln Ile
        20                    25                    30
Thr Val Ile Ser Ala Lys Leu Lys Glu Asn Lys Lys Asn Trp Phe Gly
        35                    40                    45
Pro Ser Pro Tyr Val Glu Val Thr Val Asp Gly Gln Ser Lys Lys Thr
        50                    55                    60
Glu Lys Cys Asn Asn Thr Asn Ser Pro Lys Trp Lys Gln Pro Leu Thr
65                    70                    75                    80
Val Ile Val Thr Pro Val Ser Lys Leu His
                85                    90
```

```
        <210> 780
        <211> 88
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 780
Ile Glu Thr Leu Ser Phe Val Ile Arg Asn Trp Asn Thr His Ala Met
1                   5                   10                    15
Ser Lys Pro Ile Val Met Glu Arg Gly Val Lys Tyr Arg Asp Ala Asp
```

```
                      20                    25                    30
Lys Met Ala Leu Ile Pro Val Lys Asn Val Ala Thr Glu Arg Glu Ala
         35                    40                    45
Leu Leu Arg Lys Pro Glu Trp Met Lys Ile Lys Leu Pro Ala Asp Ser
     50                    55                    60
Thr Arg Ile Gln Gly Ile Lys Ala Ala Met Arg Lys Asn Gly Leu His
 65                    70                    75                    80
Ser Val Cys Glu Glu Ala Ser Cys
                 85            88
```

```
        <210> 781
        <211> 35
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 781
Pro Arg Met Val Leu Gly Lys Pro Gln Thr Asp Pro Thr Leu Glu Trp
 1               5                    10         .          15
Phe Leu Ser His Cys His Ile His Lys Tyr Pro Ser Lys Ser Thr Leu
                 20                    25                    30
Ile Pro Gln
         35
```

```
        <210> 782
        <211> 145
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 782
Gly Leu Arg Ile Ser Val Gln Glu Arg Ile Lys Ala Cys Phe Thr Glu
 1               5                    10      ,             15
Ser Ile Gln Thr Gln Ile Ala Ala Ala Glu Ala Leu Pro Asp Ala Ile
                 20                    25                    30
Ser Arg Ala Ala Met Thr Leu Val Gln Ser Leu Leu Asn Gly Asn Lys
         35                    40                    45
Ile Leu Cys Cys Gly Asn Gly Thr Ser Ala Ala Asn Ala Gln His Phe
    .50                    55                    60
Ala Ala Ser Met Ile Asn Arg Phe Glu Thr Glu Arg Pro Ser Leu Pro
 65                    70                    75                    80
Ala Ile Ala Leu Asn Thr Asp Asn Val Val Leu Thr Ala Ile Ala Asn
                 85                    90                    95
Asp Arg Leu His Asp Glu Val Tyr Ala Lys Gln Val Arg Ala Leu Gly
             100                   105                   110
His Ala Gly Asp Val Leu Leu Ala Ile Ser Thr Arg Gly Asn Ser Arg
         115                   120                   125
Asp Ile Val Lys Ala Val Glu Ala Ala Val Thr Arg Asp Thr Thr Ile
     130                   135                   140
Val
145
```

```
        <210> 783
        <211> 102
        <212>Amino acid
```

429

<213> Homo sapiens

<400> 783

```
Lys Gln Thr Gln His Ala Pro Gly Met Met Lys Lys Tyr Leu Ala Leu
1               5               10              15
Ala Leu Ile Ala Pro Leu Leu Ile Ser Cys Ser Thr Thr Lys Lys Gly
          20              25              30
Asp Thr Tyr Asn Glu Ala Trp Val Lys Asp Thr Asn Gly Phe Asp Ile
      35              40              45
Leu Met Gly Gln Phe Ala His Asn Ile Glu Asn Ile Trp Gly Phe Lys
    50              55              60
Glu Val Val Ile Ala Gly Pro Lys Asp Tyr Val Lys Tyr Thr Asp Gln
65              70              75              80
Tyr Gln Thr Arg Ser His Ile Asn Phe Asp Asp Gly Thr Ile Thr Ile
          85              90              95
Glu Pro Ile Pro Gly Thr
          100     102
```

<210> 784
<211> 78
<212>Amino acid
<213> Homo sapiens

<400> 784

```
Thr Asp Arg Thr Ala Leu Asn Pro Gly Gln Glu Ser Ala Met Asn Arg
1               5               10              15
Leu Phe Ser Gly Arg Ser Asp Met Pro Phe Ala Leu Leu Leu Leu Ala
          20              25              30
Pro Ser Leu Leu Leu Leu Gly Gly Leu Val Ala Trp Pro Met Val Ser
          35              40              45
Asn Ile Glu Ile Ser Phe Leu Arg Leu Pro Leu Asn Pro Asn Ile Glu
    50              55              60
Ser Thr Phe Val Gly Val Ser Asn Tyr Val Arg Ile Leu Ser
65              70              75      78
```

<210> 785
<211> 148
<212>Amino acid
<213> Homo sapiens

<400> 785

```
Lys Glu Leu Val Asp Glu Lys Ser Glu Arg Gly Arg Ala Met Asp Pro
1               5               10              15
Val Ser Gln Leu Ala Ser Ala Gly Thr Phe Arg Val Leu Lys Glu Pro
          20              25              30
Leu Ala Phe Leu Arg Ala Leu Glu Leu Leu Phe Ala Ile Phe Ala Phe
      35              40              45
Ala Thr Cys Gly Gly Tyr Ser Gly Gly Leu Arg Leu Ser Val Asp Cys
    50              55              60
Val Asn Lys Thr Glu Ser Asn Leu Ser Ile Asp Ile Ala Phe Ala Tyr
```

```
65                      70                      75                      80
Pro Phe Arg Leu His Gln Val Thr Phe Glu Val Pro Thr Cys Glu Gly
                85                      90                      95
Lys Glu Arg Gln Lys Leu Ala Leu Ile Gly Asp Ser Ser Ser Ser Ala
        100                     105                     110
Glu Phe Phe Val Thr Val Ala Val Phe Ala Phe Leu Tyr Ser Leu Ala
        115                     120                     125
Ala Thr Gly Arg Tyr Ile Phe Phe His Asn Lys Asn Arg Glu Asn Asn
    130                     135                     140
Arg Gly Pro Leu
145         148
```

```
        <210> 786
        <211> 246
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 786
Leu Gly Thr Val Ser Tyr Gly Ala Asp Thr Met Asp Glu Ile Gln Ser
1               5                       10                      15
His Val Arg Asp Ser Tyr Ser Gln Met Gln Ser Gln Ala Gly Gly Asn
            20                      25                      30
Asn Thr Gly Ser Thr Pro Leu Arg Lys Ala Gln Ser Ser Ala Pro Lys
        35                      40                      45
Val Arg Lys Ser Val Ser Ser Arg Ile His Glu Ala Val Lys Ala Ile
    50                      55                      60
Val Leu Cys His Asn Val Thr Pro Val Tyr Glu Ser Arg Ala Gly Val
65                      70                      75                      80
Thr Glu Glu Thr Glu Phe Ala Glu Ala Asp Gln Asp Phe Ser Asp Glu
                85                      90                      95
Asn Arg Thr Tyr Gln Ala Ser Ser Pro Asp Glu Val Ala Leu Val Gln
        100                     105                     110
Trp Thr Glu Ser Val Gly Leu Thr Leu Val Ser Arg Asp Leu Thr Ser
        115                     120                     125
Met Gln Leu Lys Thr Pro Ser Gly Gln Val Leu Ser Phe Cys Ile Leu
    130                     135                     140
Gln Leu Phe Pro Phe Thr Ser Glu Ser Lys Arg Met Gly Val Ile Val
145                     150                     155                     160
Arg Asp Glu Ser Thr Ala Glu Ile Thr Phe Tyr Met Lys Gly Ala Asp
                165                     170                     175
Val Ala Met Ser Pro Ile Val Gln Tyr Asn Asp Trp Leu Glu Glu Glu
            180                     185                     190
Cys Gly Asn Met Ala Arg Glu Gly Leu Arg Thr Leu Val Val Ala Lys
        195                     200                     205
Lys Ala Leu Thr Glu Glu Gln Tyr Gln Asp Phe Glu Val Ser Arg Leu
    210                     215                     220
Pro Gly Ile Pro Ser Ser Tyr Asp Gly Ala Phe Leu Thr Leu Lys Leu
225                     230                     235                     240
Val Leu Pro Val Phe Val
            245 246
```

```
        <210> 787
        <211> 176
        <212>Amino acid
        <213> Homo sapiens
```

```
       <400> 787
Glu Gly Pro His Arg Arg Leu Phe Gln Met Val Lys Ala Leu Gln Glu
 1               5                  10                  15
Ala Pro Glu Asp Pro Asn Gln Ile Leu Ile Gly Tyr Ser Arg Gly Leu
            20                  25                  30
Val Val Ile Trp Asp Leu Gln Gly Ser Arg Val Leu Tyr His Phe Leu
        35                  40                  45
Ser Ser Gln Gln Leu Glu Asn Ile Trp Trp Gln Arg Asp Gly Arg Leu
    50                  55                  60
Leu Val Ser Cys His Ser Asp Gly Ser Tyr Cys Gln Trp Pro Val Ser
65                  70                  75                  80
Ser Glu Ala Gln Gln Pro Glu Pro Leu Arg Ser Leu Val Pro Tyr Gly
                85                  90                  95
Pro Phe Pro Cys Lys Ala Ile Thr Arg Ile Leu Trp Leu Thr Thr Arg
            100                 105                 110
Gln Gly Leu Pro Phe Thr Ile Phe Gln Gly Gly Met Pro Arg Ala Ser
        115                 120                 125
Tyr Gly Asp Arg His Cys Ile Ser Val Ile His Asp Gly Gln Gln Thr
    130                 135                 140
Ala Phe Asp Phe Thr Ser Arg Val Ile Gly Phe Thr Val Leu Thr Glu
145                 150                 155                 160
Ala Asp Pro Ala Ala Ser Arg Arg Ala Ser Gly Val Gly Ala Gln Gly
            165                 170                 175 176
```

```
       <210> 788
       <211> 180
       <212>Amino acid
       <213> Homo sapiens
```

```
       <400> 788
Lys Gln Gly Leu Glu Val Arg Asp Leu His Phe Lys Glu Ile Thr Ser
 1               5                  10                  15
Gly Arg Ala Leu Leu Arg Val Ala Cys Lys Arg Pro Ser Met Val Pro
            20                  25                  30
Gly Gly Gln Leu Gln Arg Ala Gly Ala Gly Ala Gln Ala Arg Ile Thr
        35                  40                  45
Gly Leu Ser Pro Ala Leu Trp Gly Ala Arg Val His Gly Trp Ile Pro
    50                  55                  60
Glu Leu Pro Ala Gly Leu Pro Pro Gly Ala Cys Leu Trp Pro Leu Ile
65                  70                  75                  80
Pro Ala Cys Pro Ser Arg His Trp Gly Trp Val Ser Ala Pro Val Lys
                85                  90                  95
Gly Trp Ala Gln Ala Ile Leu Gly Leu Ala Leu Cys Leu Arg Gly Glu
            100                 105                 110
His Arg Gly Leu Gly Ala Gly Val Ser Lys Val Arg Ser Leu Lys Met
        115                 120                 125
Asp Arg Lys Val Trp Thr Glu Thr Leu Ile Glu Val Gly Met Pro Leu
    130                 135                 140
Leu Ala Thr Asp Thr Trp Gly Leu Pro His Ser Thr Ala Val Trp Val
145                 150                 155                 160
Ser Gln Pro Pro Pro Tyr Leu Ser Asp His Ser Thr Leu Glu Leu Glu
                165                 170                 175
Arg Asp Pro Leu
            180
```

432

```
        <210> 789
        <211> 145
        <212>Amino acid
        <213> Homo sapiens




        <400> 789
Leu Ser Cys Asn Ser Glu Gln Ala Leu Leu Ser Leu Val Pro Val Gln
1               5                   10                  15
Arg Glu Leu Leu Arg Arg Arg Tyr Gln Ser Ser Pro Ala Lys Pro Asp
            20                  25                  30
Ser Ser Phe Tyr Lys Gly Leu Gly Thr Cys Pro Ser Gln Leu Arg Leu
        35                  40                  45
Ser Glu Pro Pro Pro Thr Pro Arg His Leu Ser Val Ala Ser Val Ser
    50                  55                  60
His His Met Phe Pro Ser His Arg Ser Leu Cys Pro His Leu Pro Asp
65                  70                  75                  80
Phe Phe Ala Ala Pro Phe Pro Ser Asp Asn Leu Pro Tyr Thr Leu Gln
                85                  90                  95
Ser Pro Phe Pro Ser Pro Pro Ala Thr Pro Ser Asp His Ala Leu
            100                 105                 110
Ile Leu His His Asp Leu Asn Gly Gly Pro Asp Asp Pro Leu Gln Gln
            115                 120                 125
Thr Gly Gln Leu Phe Gly Gly Leu Val Arg Asp Ile Arg Arg Arg Tyr
    130                 135                 140
Pro
145
```

```
        <210> 790
        <211> 65
        <212>Amino acid
        <213> Homo sapiens




        <400> 790
Ser Pro Ser Ser Lys Leu Val Gly Met Trp Trp Ala Gly Arg Ala Gly
1               5                   10                  15
Ser Ser Arg Thr Thr Ser Val Ser Leu Leu Cys Leu Pro Ser Ala Pro
            20                  25                  30
Phe Gly Ala Ser Asn Leu Leu Val Asn Pro Leu Glu Pro Gln Asn Ala
        35                  40                  45
Asp Lys Ile Lys Ile Lys Ile Ala Asp Leu Gly Asn Ala Cys Trp Val
    50                  55                  60
Val
65
```

```
        <210> 791
        <211> 144
        <212>Amino acid
        <213> Homo sapiens
```

433

```
      <400> 791
Arg Val Asp Pro Arg Val Arg Ala Pro Arg Cys Gly Asp Lys Ile Lys
1               5               10              15
Asn His Met Tyr Lys Cys Asp Cys Gly Ser Leu Lys Asp Cys Ala Ser
            20              25              30
Asp Arg Cys Cys Glu Thr Ser Cys Thr Leu Ser Leu Gly Ser Val Cys
        35              40              45
Asn Thr Gly Leu Cys Cys His Lys Cys Lys Tyr Ala Ala Pro Gly Val
    50              55              60
Val Cys Arg Asp Leu Gly Gly Ile Cys Asp Leu Pro Glu Tyr Cys Asp
65          .   70              75              80
Gly Lys Lys Glu Glu Cys Pro Asn Asp Ile Tyr Ile Gln Asp Gly Thr
            85              90              95
Pro Cys Ser Ala Val Ser Val Cys Ile Arg Gly Asn Cys Ser Asp Arg
        100             105             110
Asp Met Gln Cys Gln Ala Leu Phe Gly Tyr Gln Val Lys Asp Gly Ser
    115             120             125
Pro Ala Cys Tyr Arg Lys Leu Asn Arg Ile Gly Asn Arg Phe Gly Thr
    130             135             140             144
```

```
      <210> 792
      <211> 242
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 792
Pro Gly Arg Pro Thr Arg Pro Asp Ala Ser Leu Ala Gln Asp Pro Arg
1               5               10              15
Thr Thr Met Phe Arg Ile Pro Glu Phe Lys Trp Ser Pro Met His Gln
            20              25              30
Arg Leu Leu Thr Asp Leu Leu Phe Ala Leu Glu Thr Asp Val His Val
        35              40              45
Trp Arg Ser His Ser Thr Lys Ser Val Met Asp Phe Val Asn Ser Asn
    50              55              60
Glu Asn Ile Ile Phe Val His Asn Thr Ile His Leu Ile Ser Gln Met
65              70              75              80
Val Asp Asn Ile Ile Ile Ala Cys Gly Gly Ile Leu Pro Leu Leu Ser
            85              90              95
Ala Ala Thr Ser Pro Thr Gly Ser Lys Thr Glu Leu Glu Asn Ile Glu
        100             105             110
Val Thr Gln Gly Met Ser Ala Glu Thr Ala Val Thr Phe Leu Ser Arg
    115             120             125
Leu Met Ala Met Val Asp Val Leu Val Phe Ala Ser Ser Leu Asn Phe
    130             135             140
Ser Glu Ile Glu Ala Glu Lys Asn Met Ser Ser Gly Gly Leu Met Arg
145             150             155             160
Gln Cys Leu Lys Leu Val Cys Cys Val Ala Val Arg Asn Cys Leu Glu
            165             170             175
Cys Arg Gln Arg Gln Arg Asp Arg Gly Asn Lys Ser Ser His Gly Ser
        180             185             190
Ser Lys Pro Gln Glu Val Pro Gln Ser Val Thr Ala Thr Ala Ala Ser
    195             200             205
Lys Thr Pro Leu Glu Asn Val Pro Gly Asn Leu Ser Pro Ile Lys Asp
    210             215             220
Pro Asp Arg Leu Leu Gln Asp Val Asp Ile Asn Arg Leu Arg Ala Val
225         .   230             235             240
Val Phe
```

434

242

<210> 793
<211> 412
<212>Amino acid
<213> Homo sapiens

<400> 793
Asn Ser Ser Gly Val Lys Leu Leu Gln Ala Leu Gly Leu Ser Pro Gly
1   5   10   15
Asn Gly Lys Asp His Ser Ile Leu His Ser Arg Asn Asp Leu Glu Glu
            20   25   30
Ala Phe Ile His Phe Met Gly Lys Gly Ala Ala Ala Glu Arg Phe Phe
            35   40   45
Ser Asp Lys Glu Thr Phe His Asp Ile Ala Gln Val Ala Ser Glu Phe
        50   55   60
Pro Gly Ala Gln His Tyr Val Gly Gly Asn Ala Ala Leu Ile Gly Gln
65   70   75   80
Lys Phe Ala Ala Asn Ser Asp Leu Lys Val Leu Leu Cys Gly Pro Val
                85   90   95
Gly Pro Lys Leu His Glu Leu Leu Asp Asp Asn Val Phe Val Pro Pro
            100   105   110
Glu Ser Leu Gln Glu Val Asp Glu Phe His Leu Ile Leu Glu Tyr Gln
        115   120   125
Ala Gly Glu Glu Trp Gly Gln Leu Lys Ala Pro His Ala Asn Arg Phe
    130   135   140
Ile Phe Ser His Asp Leu Ser Asn Gly Ala Met Asn Met Leu Glu Val
145   150   155   160
Phe Val Ser Ser Leu Glu Glu Phe Gln Pro Asp Leu Gly Gly Leu Ser
                165   170   175
Gly Leu His Met Met Glu Gly Gln Ser Lys Glu Leu Gln Arg Lys Arg
            180   185   190
Leu Leu Glu Val Val Thr Ser Ile Ser Asp Ile Pro Thr Gly Ile Pro
        195   200   205
Val His Leu Glu Leu Gly Ser Met Thr Asn Arg Glu Leu Met Ser Ser
    210   215   220
Ile Val Leu Gln Gln Val Phe Pro Ala Val Thr Ser Leu Gly Leu Asn
225   230   235   240
Glu Gln Glu Leu Leu Phe Leu Thr Gln Ser Ala Ser Gly Pro His Ser
                245   250   255
Ser Leu Ser Ser Trp Asn Gly Val Pro Asp Val Gly Met Val Ser Asp
            260   265   270
Ile Leu Phe Trp Ile Leu Lys Glu His Gly Arg Ser Lys Ser Arg Ala
            275   280   285
Ser Asp Leu Thr Arg Ile His Phe His Thr Leu Val Tyr His Ile Leu
        290   295   300
Ala Thr Val Asp Gly His Trp Ala Asn Gln Leu Ala Ala Val Ala Ala
305   310   315   320
Gly Ala Arg Val Ala Gly Thr Gln Ala Cys Ala Thr Glu Thr Ile Asp
                325   330   335
Thr Ser Arg Val Ser Leu Arg Ala Pro Gln Glu Phe Met Thr Ser His
            340   345   350
Ser Glu Ala Gly Ser Arg Ile Val Leu Asn Pro Asn Lys Pro Val Val
        355   360   365
Glu Trp His Arg Glu Gly Ile Ser Phe His Phe Thr Pro Val Leu Val
    370   375   380
Cys Lys Asp Pro Ile Arg Thr Val Gly Leu Gly Asp Ala Ile Ser Ala
385   390   395   400
Glu Gly Leu Phe Tyr Ser Glu Val His Pro His Tyr

                    405   410   412

     <210> 794
     <211> 83
     <212>Amino acid
     <213> Homo sapiens

         <400> 794
Asp Asp Ser Ser Gly Trp Gly Leu Glu Gln Leu Val Val Arg Trp Ser
 1   5   10   15
Leu Ala Leu Trp Pro Arg Leu Glu Cys Ser Gly Met Ile Ser Ala His
            20   25   30
Cys Asn Leu Cys Leu Leu Gly Ser Ser Asp Ser Pro Ala Ser Ala Pro
        35   40   45
Arg Val Ala Gly Ile Thr Asp Val Cys His His Ala Trp Leu Val Phe
    50   55   60
Val Phe Leu Val Val Met Gly Phe Pro His Val Gly His Val Gly Leu
65   70   75   80
Glu Leu Leu
        83

     <210> 795
     <211> 391
     <212>Amino acid
     <213> Homo sapiens

         <400> 795
Leu Gly Glu Val Leu Lys Cys Gln Gln Gly Val Ser Ser Leu Ala Phe
 1   5   10   15
Ala Leu Ala Phe Leu Gln Arg Met Asp Met Lys Pro Leu Val Val Leu
            20   25   30
Gly Leu Pro Ala Pro Thr Ala Pro Ser Gly Cys Leu Ser Phe Trp Glu
        35   40   45
Ala Lys Ala Gln Leu Ala Lys Ser Cys Lys Val Leu Val Asp Ala Leu
    50   55   60
Arg His Asn Ala Ala Ala Ala Val Pro Phe Phe Gly Gly Gly Ser Val
65   70   75   80
Leu Arg Ala Ala Glu Pro Ala Pro His Ala Ser Tyr Gly Gly Ile Val
            85   90   95
Ser Val Glu Thr Asp Leu Leu Gln Trp Cys Leu Glu Ser Gly Ser Ile
            100   105   110
Pro Ile Leu Cys Pro Ile Gly Glu Thr Ala Ala Arg Arg Ser Val Leu
        115   120   125
Leu Asp Ser Leu Glu Val Thr Ala Ser Leu Ala Lys Ala Leu Arg Pro
        130   135   140
Thr Lys Ile Ile Phe Leu Asn Asn Thr Gly Gly Leu Arg Asp Ser Ser
145   150   155   160
His Lys Val Leu Ser Asn Val Asn Leu Pro Ala Asp Leu Asp Leu Val
                165   170   175
Cys Asn Ala Glu Trp Val Ser Thr Lys Glu Arg Gln Gln Met Arg Leu
            180   185   190
Ile Val Asp Val Leu Ser Arg Leu Pro His His Ser Ser Ala Val Ile
        195   200   205
Thr Ala Ala Ser Thr Leu Leu Thr Glu Leu Phe Ser Asn Lys Gly Ser

```
                210                      215                      220
Gly Thr Leu Phe Lys Asn Ala Glu Arg Met Leu Arg Val Arg Ser Leu
225                      230                      235                      240
Asp Lys Leu Asp Gln Gly Arg Leu Val Asp Leu Val Asn Ala Ser Phe
                    245                      250                      255
Gly Lys Lys Leu Arg Asp Asp Tyr Leu Ala Ser Leu Arg Pro Arg Leu
                    260                      265                      270
His Ser Ile Tyr Val Ser Glu Gly Tyr Asn Ala Ala Ala Ile Leu Thr
            275                      280                      285
Met Glu Pro Val Leu Gly Gly Thr Pro Tyr Leu Asp Lys Phe Val Val
    290                      295                      300
Ser Ser Ser Arg Gln Gly Gln Gly Ser Gly Gln Met Leu Trp Glu Cys
305                      310                      315                      320
Leu Arg Arg Asp Leu Gln Thr Leu Phe Trp Arg Ser Arg Val Thr Asn
                325                      330                      335
Pro Ile Asn Pro Trp Tyr Phe Lys His Ser Asp Gly Ser Phe Ser Asn
            340                      345                      350
Lys Gln Trp Ile Phe Phe Trp Phe Gly Leu Ala Asp Ile Arg Asp Ser
        355                      360                      365
Tyr Glu Leu Val Asn His Ala Lys Gly Leu Pro Asp Ser Phe His Lys
    370                      375                      380
Pro Ala Ser Asp Pro Gly Ser
385                 390 391


    <210> 796
    <211> 127
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(127)
    <223> X = any amino acid or stop code



    <400> 796
Tyr His Ala Pro Ala Leu Gln Pro Gly Gln Gln Ser Lys Thr Leu Ser
1                   5                   10                      15
Gln Glu Lys Lys Asn Phe Phe Arg Pro Gly Ala Val Ala His Thr Cys
            20                      25                      30
Asn Pro Ser Thr Leu Gly Gly Arg Gly Gly Arg Ile Thr Arg Ser Gly
        35                      40                      45
Asp Arg Asp His Pro Gly Xaa His Gly Glu Thr Pro Ser Leu Leu Lys
    50                      55                      60
Ile Gln Lys Lys Leu Ala Gly Arg Asp Gly Gly Arg Leu Xaa Ser Gln
65                      70                      75                      80
Leu Leu Gly Arg Leu Arg Gln Glu Asn Gly Val Asn Pro Gly Gly Gly
                85                      90                      95
Gly Cys Ser Glu Pro Arg Leu Arg His Cys Thr Pro Ala Trp Xaa Gln
            100                     105                     110
Ser Glu Thr Ile Ser Arg Lys Lys Arg Lys Lys Glu Arg Lys Tyr
        115                     120                     125 127


    <210> 797
    <211> 159
    <212>Amino acid
    <213> Homo sapiens
```

```
     <400> 797
Phe Arg Pro Ile Gly Ile Ile Arg Gln Ala Leu Cys Ser Ala Asp Gly
 1               5                   10                  15
His Gln Arg Arg Ile Leu Thr Leu Arg Leu Gly Leu Leu Val Ile Pro
            20                  25                  30
Phe Leu Pro Ala Ser Asn Leu Phe Phe Arg Val Gly Phe Val Val Pro
        35                  40                  45
Ser Val Gly Cys Cys Val Met Leu Leu Phe Gly Phe Gly Ala Leu Arg
    50                  55                  60
Lys His Thr Glu Lys Lys Lys Leu Ile Ala Ala Val Val Leu Gly Ile
65                  70                  75                  80
Leu Leu Ser Asn Asp Ala Glu Arg Leu Arg Cys Ala Val Arg Gly Gly
                85                  90                  95
Glu Trp Arg Ser Glu Glu Ala Val Phe Arg Gly Ala Val Ser Val Cys
            100                 105                 110
Pro Leu Ser Ala Glu Val Arg Cys Asn Ile Gly Arg Asn Leu Ala Ala
            115                 120                 125
Lys Gly Asn Gln Thr Gly Ala Ile Arg Tyr His Arg Glu Ala Val Ser
    130                 135                 140
Leu Asn Pro Lys Thr Lys Ser Ser Thr Arg Glu Phe Arg Pro Cys
145                 150                 155             159


     <210> 798
     <211> 236
     <212>Amino acid
     <213> Homo sapiens




     <400> 798
Lys Ile Ala Asp Phe Gly Phe Ser Asn Leu Phe Thr Pro Gly Gln Leu
 1               5                   10                  15
Leu Lys Thr Trp Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Leu Phe
            20                  25                  30
Glu Gly Lys Glu Tyr Asp Gly Pro Lys Val Asp Ile Trp Ser Leu Gly
            35                  40                  45
Val Val Leu Tyr Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Ser
    50                  55                  60
Thr Leu Gln Asn Leu Arg Ala Arg Val Leu Ser Gly Lys Phe Arg Ile
65                  70                  75                  80
Pro Phe Phe Met Ser Thr Glu Cys Glu His Leu Ile Arg His Met Leu
                85                  90                  95
Val Leu Asp Pro Asn Lys Arg Leu Ser Met Glu Gln Ile Cys Lys His
            100                 105                 110
Lys Trp Met Lys Leu Gly Asp Ala Asp Pro Asn Phe Asp Arg Leu Ile
        115                 120                 125
Ala Glu Cys Gln Gln Leu Lys Glu Glu Arg Gln Val Asp Pro Leu Asn
    130                 135                 140
Glu Asp Val Leu Leu Ala Met Glu Asp Met Gly Leu Asp Lys Glu Gln
145                 150                 155                 160
Thr Leu Gln Ser Leu Arg Ser Asp Ala Tyr Asp His Tyr Ser Ala Ile
            165                 170                 175
Tyr Ser Leu Leu Cys Asp Arg His Lys Arg His Lys Thr Leu Arg Leu
        180                 185                 190
Gly Ala Leu Pro Ser Met Pro Arg Ala Leu Gly Leu Ser Ser Thr Ser
    195                 200                 205
Gln Tyr Pro Ala Glu Gln Ala Gly Thr Ala Met Asn Ile Ser Val Pro
    210                 215                 220
```

438

Gln Val Gln Leu Ile Asn Pro Glu Asn Gln Ile Val
225   230   235 236

        <210> 799
        <211> 114
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(114)
        <223> X = any amino acid or stop code

        <400> 799
Ala Arg Glu Phe Leu Gly His Arg Ala Ser Ile Thr Trp Ser Xaa Ala
1   5   10   15
Arg Val His His Arg Phe Pro Lys Ala Glu Val Ala Xaa Pro Ser Leu
        20   25   30
Leu Arg Thr Asp Leu Thr Glu Asp Arg Thr Lys Cys Cys His Gly Asp
        35   40   45
Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Val Glu Asp Ile Trp
    50   55   60
Glu Asn Gln Asp Ser Ile Ser Thr Ile Leu Ile Glu Cys Cys Glu Lys
65   70   75   80
Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu
            85   90   95
Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys
        100   105   110
Asp Val
    114

        <210> 800
        <211> 328
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(328)
        <223> X = any amino acid or stop code

        <400> 800
Val Pro Pro Lys Met Lys Arg Gly Thr Ser Leu His Ser Arg Arg Gly
1   5   10   15
Lys Pro Glu Ala Pro Lys Gly Ser Pro Gln Ile Asn Arg Lys Ser Gly
        20   25   30
Gln Glu Met Thr Ala Val Met Gln Ser Gly Arg Pro Arg Ser Ser Ser
        35   40   45
Thr Thr Asp Ala Pro Thr Gly Ser Ala Met Met Glu Ile Ala Cys Ala
    50   55   60
Ala Ala Ala Ala Ala Ala Cys Leu Pro Gly Glu Glu Gly Thr Ala
65   70   75   80
Glu Arg Ile Glu Arg Leu Glu Val Ser Ser Leu Ala Gln Thr Ser Ser
            85   90   95

```
Ala Val Ala Ser Ser Thr Asp Gly Ser Ile His Thr Asp Ser Val Asp
            100               105               110
Gly Thr Pro Asp Pro Gln Arg Thr Lys Ala Ala Ile Ala His Leu Gln
        115               120               125
Gln Lys Ile Leu Lys Leu Thr Glu Gln Ile Lys Ile Ala Gln Thr Ala
    130               135               140
Arg Arg Asn Arg Arg Pro Gly Ser Xaa Lys Asp Cys Thr Pro Xaa Lys
145               150               155               160
Cys Leu Arg Lys Ser Asp Glu Ala Leu Asn Arg Val Leu Gln Gln Ile
            165               170               175
Arg Val Pro Pro Lys Met Lys Arg Gly Thr Ser Leu His Ser Arg Arg
        180               185               190
Gly Lys Pro Glu Ala Pro Lys Gly Ser Pro Gln Ile Asn Arg Lys Ser
        195               200               205
Gly Gln Glu Met Thr Ala Val Met Gln Ser Gly Arg Pro Arg Ser Ser
    210               215               220
Ser Thr Thr Asp Ala Pro Thr Gly Ser Ala Met Met Glu Ile Ala Cys
225               230               235               240
Ala Ala Ala Ala Ala Ala Ala Ala Cys Leu Pro Gly Glu Glu Gly Thr
            245               250               255
Ala Glu Arg Ile Glu Arg Leu Glu Val Ser Ser Leu Ala Gln Thr Ser
            260               265               270
Ser Ala Val Ala Ser Ser Thr Asp Gly Ser Ile His Thr Asp Ser Val
        275               280               285
Asp Gly Thr Pro Asp Pro Gln Arg Thr Lys Ala Ala Ile Ala His Leu
    290               295               300
Gln Gln Lys Ile Leu Lys Leu Thr Glu Gln Ile Lys Ile Ala Gln Thr
305               310               315               320
Ala Arg Arg Asn Arg Arg Pro Gly
            325               328
```

```
<210> 801
<211> 356
<212>Amino acid
<213> Homo sapiens
```

```
<400> 801
Met Gln Thr Ile Glu Arg Leu Val Lys Glu Arg Asp Asp Leu Met Ser
1               5               10               15
Ala Leu Val Ser Val Arg Ser Ser Leu Ala Asp Thr Gln Gln Arg Glu
            20               25               30
Ala Ser Ala Tyr Glu Gln Val Lys Gln Val Leu Gln Ile Ser Glu Glu
        35               40               45
Ala Asn Phe Glu Lys Thr Lys Ala Leu Ile Gln Cys Asp Gln Leu Arg
    50               55               60
Lys Glu Leu Glu Arg Gln Ala Glu Arg Leu Glu Lys Glu Leu Ala Ser
65               70               75               80
Gln Gln Glu Lys Arg Ala Ile Glu Lys Asp Met Met Lys Lys Glu Ile
            85               90               95
Thr Lys Glu Arg Glu Tyr Met Gly Ser Lys Met Leu Ile Leu Ser Gln
            100               105               110
Asn Ile Ala Gln Leu Glu Ala Gln Val Glu Lys Val Thr Lys Glu Lys
        115               120               125
Ile Ser Ala Ile Asn Gln Leu Glu Glu Ile Gln Ser Gln Leu Ala Ser
    130               135               140
Arg Glu Met Asp Val Thr Lys Val Cys Gly Glu Met Arg Tyr Gln Leu
145               150               155               160
Asn Lys Thr Asn Met Glu Lys Asp Glu Ala Glu Lys Glu His Arg Glu
            165               170               175
```

440

```
Phe Arg Ala Lys Thr Asn Arg Asp Leu Glu Ile Lys Asp Gln Glu Ile
            180                     185                     190
Glu Lys Leu Arg Ile Glu Leu Asp Glu Ser Lys Gln His Leu Glu Gln
        195                     200                     205
Glu Gln Gln Lys Ala Ala Leu Ala Arg Glu Glu Cys Leu Arg Leu Thr
    210                     215                     220
Glu Leu Leu Gly Glu Ser Glu His Gln Leu His Leu Thr Arg Gln Glu
225                     230                     235                     240
Lys Asp Ser Ile Gln Gln Ser Phe Ser Lys Glu Ala Lys Ala Gln Ala
            245                     250                     255
Leu Gln Ala Gln Gln Arg Glu Gln Glu Leu Thr Gln Lys Ile Gln Gln
            260                     265                     270
Met Glu Ala Gln His Asp Lys Thr Glu Asn Glu Gln Tyr Leu Leu Leu
    275                     280                     285
Thr Ser Gln Asn Thr Phe Leu Thr Lys Leu Lys Glu Glu Cys Cys Thr
290                     295                     300
Leu Ala Lys Lys Leu Glu Gln Ile Ser Gln Lys Thr Arg Ser Glu Ile
305                     310                     315                     320
Ala Gln Leu Ser Gln Glu Lys Arg Tyr Thr Tyr Asp Lys Leu Gly Lys
            325                     330                     335
Leu Gln Arg Arg Asn Glu Glu Leu Glu Glu Gln Cys Val Gln His Gly
            340                     345                     350
Arg Ser Thr  *
    355
```

```
<210> 802
<211> 210
<212>Amino acid
<213> Homo sapiens
```

```
<400> 802
Ser Tyr Pro Val Trp Trp Asn Ser Pro Leu Thr Ala Glu Val Pro Pro
1                5                   10                  15
Glu Leu Leu Ala Ala Ala Gly Phe Phe His Thr Gly His Gln Asp Lys
        20                      25                      30
Val Arg Cys Phe Phe Cys Tyr Gly Gly Leu Gln Ser Trp Lys Arg Gly
        35                      40                      45
Asp Asp Pro Trp Thr Glu His Ala Lys Trp Phe Pro Ser Cys Gln Phe
    50                      55                      60
Leu Leu Arg Ser Lys Gly Arg Asp Phe Val His Ser Val Gln Glu Thr
65                      70                      75                      80
His Ser Gln Leu Leu Gly Ser Trp Asp Pro Trp Glu Glu Pro Glu Asp
            85                      90                      95
Ala Ala Pro Val Ala Pro Ser Val Pro Ala Ser Gly Tyr Pro Glu Leu
            100                     105                     110
Pro Thr Pro Arg Arg Glu Val Gln Ser Glu Ser Ala Gln Glu Pro Gly
        115                     120                     125
Gly Val Ser Pro Ala Glu Ala Gln Arg Ala Trp Trp Val Leu Glu Pro
    130                     135                     140
Pro Gly Ala Arg Asp Val Glu Ala Gln Leu Arg Arg Leu Gln Glu Glu
145                     150                     155                     160
Arg Thr Cys Lys Val Cys Leu Asp Arg Ala Val Ser Ile Val Phe Val
            165                     170                     175
Pro Cys Gly His Leu Val Cys Ala Glu Cys Ala Pro Gly Leu Gln Leu
            180                     185                     190
Cys Pro Ile Cys Arg Ser Pro Cys Gly Pro Leu Arg Pro Cys Leu Trp
        195                     200                     205
Val Pro
    210
```

<210> 803
<211> 130
<212>Amino acid
<213> Homo sapiens

<400> 803
```
Met Cys Ser Tyr Arg Glu Lys Lys Ala Glu Pro Gln Glu Leu Leu Gln
1               5                   10                  15
Leu Asp Gly Tyr Thr Val Asp Tyr Thr Asp Pro Gln Pro Gly Leu Glu
            20                  25                  30
Gly Gly Arg Ala Phe Phe Asn Ala Val Lys Glu Gly Asp Thr Val Ile
        35                  40                  45
Phe Ala Ser Asp Asp Glu Gln Asp Arg Ile Leu Trp Val Gln Ala Met
        50                  55                  60
Tyr Arg Ala Thr Gly Gln Ser His Lys Pro Val Pro Pro Thr Gln Val
65                  70                  75                  80
Gln Lys Leu Asn Ala Lys Gly Gly Asn Val Pro Gln Leu Asp Ala Pro
            85                  90                  95
Ile Ser Gln Phe Tyr Ala Asp Arg Ala Gln Lys His Gly Met Asp Glu
            100                 105                 110
Phe Ile Ser Ser Asn Pro Cys Asn Phe Asp His Ala Ser Leu Phe Glu
            115                 120                 125
Met *
129
```

<210> 804
<211> 458
<212>Amino acid
<213> Homo sapiens

<400> 804
```
Lys Gln Leu Ile Val Leu Gly Asn Lys Val Asp Leu Leu Pro Gln Asp
1               5                   10                  15
Ala Pro Gly Tyr Arg Gln Arg Leu Arg Glu Arg Leu Trp Glu Asp Cys
            20                  25                  30
Ala Arg Ala Gly Leu Leu Leu Ala Pro Gly His Gln Gly Pro Gln Arg
        35                  40                  45
Pro Val Lys Asp Glu Pro Gln Asp Gly Glu Asn Pro Asn Pro Pro Asn
        50                  55                  60
Trp Ser Arg Thr Val Val Arg Asp Val Arg Leu Ile Ser Ala Lys Thr
65                  70                  75                  80
Gly Tyr Gly Val Glu Glu Leu Ile Ser Ala Leu Gln Arg Ser Trp Arg
            85                  90                  95
Tyr Arg Gly Asp Val Tyr Leu Val Gly Ala Thr Asn Ala Gly Lys Ser
            100                 105                 110
Thr Leu Phe Asn Thr Leu Leu Glu Ser Asp Tyr Cys Thr Ala Lys Gly
            115                 120                 125
Ser Glu Ala Ile Asp Arg Ala Thr Ile Ser Pro Trp Pro Gly Thr Thr
            130                 135                 140
Leu Asn Leu Leu Lys Phe Pro Ile Cys Asn Pro Thr Pro Tyr Arg Met
145                 150                 155                 160
Phe Lys Arg His Gln Arg Leu Lys Lys Asp Ser Thr Gln Ala Glu Glu
            165                 170                 175
```

442

```
Asp Leu Ser Glu Gln Glu Gln Asn Gln Leu Asn Val Leu Lys Lys His
            180             185             190
Gly Tyr Val Val Gly Arg Val Gly Arg Thr Phe Leu Tyr Ser Glu Glu
            195             200             205
Gln Lys Asp Asn Ile Pro Phe Glu Phe Asp Ala Asp Ser Leu Ala Phe
210             215             220
Asp Met Glu Asn Asp Pro Val Met Gly Thr His Lys Ser Thr Lys Gln
225             230             235             240
Val Glu Leu Thr Ala Gln Asp Val Lys Asp Ala His Trp Phe Tyr Asp
            245             250             255
Thr Pro Gly Ile Thr Lys Glu Asn Cys Ile Leu Asn Leu Leu Thr Glu
            260             265             270
Lys Glu Val Asn Ile Val Leu Pro Thr Gln Ser Ile Val Pro Arg Thr
            275             280             285
Phe Val Leu Lys Pro Gly Met Val Leu Phe Leu Gly Ala Ile Gly Arg
            290             295             300
Ile Asp Phe Leu Gln Gly Asn Gln Ser Ala Trp Phe Thr Val Val Ala
305             310             315             320
Ser Asn Ile Leu Pro Val His Ile Thr Ser Leu Asp Arg Ala Asp Ala
            325             330             335
Leu Tyr Gln Lys His Ala Gly His Thr Leu Leu Gln Ile Pro Met Gly
            340             345             350
Gly Lys Glu Arg Met Ala Gly Phe Pro Pro Leu Val Ala Glu Asp Ile
            355             360             365
Met Leu Lys Glu Gly Leu Gly Ala Ser Glu Ala Val Ala Asp Ile Lys
            370             375             380
Phe Ser Ser Ala Gly Trp Val Ser Val Thr Pro Asn Phe Lys Asp Arg
385             390             395             400
Leu His Leu Arg Gly Tyr Thr Pro Glu Gly Thr Val Leu Thr Val Arg
            405             410             415
Pro Pro Leu Leu Pro Tyr Ile Val Asn Ile Lys Gly Gln Arg Ile Lys
            420             425             430
Lys Ser Val Ala Tyr Lys Thr Lys Lys Pro Pro Ser Leu Met Tyr Asn
            435             440             445
Val Arg Lys Lys Lys Gly Lys Ile Asn Val
450             455             458
```

```
        <210> 805
        <211> 290
        <212> Amino acid
        <213> Homo sapiens


        <400> 805
Ser Thr Val Ala Ser Met Met His Arg Gln Glu Thr Val Glu Cys Leu
1               5               10              15
Arg Lys Phe Asn Ala Arg Arg Lys Leu Lys Gly Ala Ile Leu Thr Thr
            20              25              30
Met Leu Val Ser Arg Asn Phe Ser Ala Ala Lys Ser Leu Leu Asn Lys
            35              40              45
Lys Ser Asp Gly Gly Val Lys Pro Gln Ser Asn Asn Lys Asn Ser Leu
    50              55              60
Val Ser Pro Ala Gln Glu Pro Ala Pro Leu Gln Thr Ala Met Glu Pro
65              70              75              80
Gln Thr Thr Val Val His Asn Ala Thr Asp Gly Ile Lys Gly Ser Thr
            85              90              95
Glu Ser Cys Asn Thr Thr Thr Glu Asp Glu Asp Leu Lys Ala Ala Pro
            100             105             110
Leu Arg Thr Gly Asn Gly Ser Ser Val Pro Glu Gly Arg Ser Ser Arg
            115             120             125
```

Asp Arg Thr Ala Pro Ser Ala Gly Met Gln Pro Gln Pro Ser Leu Cys
130   135   140

Ser Ser Ala Met Arg Lys Gln Glu Ile Ile Lys Ile Thr Glu Gln Leu
145   150   155   160

Ile Glu Ala Ile Asn Asn Gly Asp Phe Glu Ala Tyr Thr Lys Ile Cys
                165   170   175

Asp Pro Gly Leu Thr Ser Phe Glu Pro Glu Ala Leu Gly Asn Leu Val
                180   185   190

Glu Gly Met Asp Phe His Lys Phe Tyr Phe Glu Asn Leu Leu Ser Lys
                195   200   205

Asn Ser Lys Pro Ile His Thr Thr Ile Leu Asn Pro His Val His Val
210   215   220

Ile Gly Glu Asp Ala Ala Cys Ile Ala Tyr Ile Arg Leu Thr Gln Tyr
225   230   235   240

Ile Asp Gly Gln Gly Arg Pro Ser Asn Pro Ala Lys Ser Glu Glu Thr
                245   250   255

Arg Val Trp His Arg Arg Asp Gly Lys Trp Leu Asn Val His Tyr His
                260   265   270

Cys Ser Gly Ala Pro Cys Pro His Arg Cys Ser Glu Leu Ser His Arg
                275   280   285

Gly Phe
290

        <210> 806
        <211> 570
        <212> Amino acid
        <213> Homo sapiens

        <400> 806
Leu Pro Lys Asn Val Val Phe Val Leu Asp Ser Ser Ala Ser Met Val
1   5   10   15

Gly Thr Lys Leu Arg Gln Thr Lys Asp Ala Leu Phe Thr Ile Leu His
                20   25   30

Asp Leu Arg Pro Gln Asp Arg Phe Ser Ile Ile Gly Phe Ser Asn Arg
                35   40   45

Ile Lys Val Trp Lys Asp His Leu Ile Ser Val Thr Pro Asp Ser Ile
50   55   60

Arg Asp Gly Lys Val Tyr Ile His His Met Ser Pro Thr Gly Gly Thr
65   70   75   80

Asp Ile Asn Gly Ala Leu Gln Arg Ala Ile Arg Leu Leu Asn Lys Tyr
                85   90   95

Val Ala His Ser Gly Ile Gly Asp Arg Arg Val Ser Leu Ile Val Phe
                100   105   110

Leu Thr Asp Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu Lys Ile
115   120   125

Leu Asn Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile Phe Thr
130   135   140

Ile Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu Ser
145   150   155   160

Leu Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Glu Asp Ala
                165   170   175

Gly Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr Pro Leu Leu
                180   185   190

Ser Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val Val Gln Ala Thr
                195   200   205

Lys Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser Glu Ile Ile Ile Ala
210   215   220

Gly Lys Leu Val Asp Arg Lys Leu Asp His Leu His Val Glu Val Thr
225   230   235   240

444

```
Ala Ser Asn Ser Lys Lys Phe Ile Ile Leu Lys Thr Asp Val Pro Val
              245             250                 255
Arg Pro Gln Lys Ala Gly Lys Asp Val Thr Gly Ser Pro Arg Pro Gly
              260             265                 270
Gly Asp Gly Glu Gly Asp Thr Asn His Ile Glu Arg Leu Trp Ser Tyr
          275             280                 285
Leu Thr Thr Lys Glu Leu Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu
    290             295             300
Pro Glu Lys Glu Arg Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser
305             310                 315                 320
Tyr Arg Phe Leu Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val
              325             330                 335
Pro Arg Met Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met
          340             345                 350
Gly Pro Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro
          355             360                 365
Gly Pro Leu Leu Lys Lys Pro Tyr Gln Pro Arg Ile Lys Ile Ser Lys
    370             375             380
Thr Ser Val Asp Gly Asp Pro His Phe Val Val Asp Phe Pro Leu Ser
385             390             395             400
Arg Leu Thr Val Cys Phe Asn Ile Asp Gly Gln Pro Gly Asp Ile Leu
              405             410                 415
Arg Leu Val Ser Asp His Arg Asp Ser Gly Val Thr Val Asn Gly Glu
              420             425             430
Leu Ile Gly Ala Pro Ala Pro Pro Asn Gly His Lys Lys Gln Arg Thr
          435             440             445
Tyr Leu Arg Thr Ile Thr Ile Leu Ile Asn Lys Pro Glu Arg Ser Tyr
    450             455             460
Leu Glu Ile Thr Pro Ser Arg Val Ile Leu Asp Gly Gly Asp Arg Leu
465             470             475             480
Val Leu Pro Cys Asn Gln Ser Val Val Val Gly Ser Trp Gly Leu Glu
              485             490                 495
Val Ser Val Ser Ala Asn Ala Asn Val Thr Val Thr Ile Gln Gly Ser
          500             505                 510
Ile Ala Phe Val Ile Leu Ile His Leu Tyr Lys Lys Pro Ala Pro Phe
          515             520             525
Gln Arg His His Leu Gly Phe Tyr Ile Ala Asn Ser Glu Gly Leu Ser
    530             535             540
Ser Asn Cys Arg Val Phe Cys Glu Ser Gly Ile Leu Ile Gln Glu Leu
545             550             555             560
Thr Gln Gln Ser Val Ala Val Ala Gly Arg
              565             570
```

```
<210> 807
<211> 279
<212> Amino acid
<213> Homo sapiens
```

```
<400> 807
Phe Phe Leu Glu Gln Val Ser Gln Tyr Thr Phe Ala Met Cys Ser Tyr
  1               5                 10                  15
Arg Glu Lys Lys Ser Glu Pro Gln Glu Leu Met Gln Leu Glu Gly Tyr
              20              25                  30
Thr Val Asp Tyr Thr Asp Pro His Pro Gly Leu Gln Gly Gly Cys Met
          35              40                  45
Phe Phe Asn Ala Val Lys Glu Gly Asp Thr Val Ile Phe Ala Ser Asp
    50              55                  60
Asp Glu Gln Asp Arg Ile Leu Trp Val Gln Ala Met Tyr Arg Ala Thr
65              70                  75                  80
```

```
Gly Gln Ser Tyr Lys Pro Val Pro Ala Ile Gln Thr Gln Lys Leu Asn
                85                  90                  95
Pro Lys Gly Gly Thr Leu His Ala Asp Ala Gln Leu Tyr Ala Asp Arg
            100                 105                 110
Phe Gln Lys His Gly Met Asp Glu Phe Ile Ser Ala Asn Pro Cys Lys
        115                 120                 125
Leu Asp His Ala Phe Leu Phe Arg Ile Leu Gln Arg Gln Thr Leu Asp
    130                 135                 140
His Arg Leu Asn Asp Ser Tyr Ser Cys Leu Gly Trp Phe Ser Pro Gly
145                 150                 155                 160
Gln Val Phe Val Leu Asp Glu Tyr Cys Ala Arg Tyr Gly Val Arg Gly
                165                 170                 175
Cys His Arg His Leu Cys Tyr Leu Ala Glu Leu Met Glu His Ser Glu
            180                 185                 190
Asn Gly Ala Val Ile Asp Pro Thr Leu Leu His Tyr Ser Phe Ala Phe
        195                 200                 205
Cys Ala Ser His Val His Gly Asn Arg Pro Asp Gly Ile Gly Thr Val
    210                 215                 220
Ser Val Glu Glu Lys Glu Arg Phe Glu Glu Ile Lys Glu Arg Leu Ser
225                 230                 235                 240
Ser Leu Leu Glu Asn Gln Ile Ser His Phe Arg Tyr Cys Phe Pro Phe
                245                 250                 255
Gly Arg Pro Glu Gly Ala Leu Lys Ala Thr Leu Ser Leu Leu Glu Arg
            260                 265                 270
Val Leu Met Lys Asp Ile Ala
        275                 279
```

```
<210> 808
<211> 251
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(251)
<223> X = any amino acid or stop code
```

```
<400> 808
Asp Gly Leu Leu His Glu Val Leu Asn Gly Leu Leu Asp Arg Pro Asp
1               5                   10                  15
Trp Glu Glu Ala Val Lys Met Pro Val Gly Ile Leu Pro Cys Gly Ser
                20                  25                  30
Gly Asn Ala Leu Ala Gly Ala Val Asn Gln His Gly Gly Phe Glu Pro
            35                  40                  45
Ala Leu Gly Leu Asp Leu Leu Leu Asn Cys Ser Leu Leu Leu Cys Arg
        50                  55                  60
Gly Gly Gly His Pro Leu Asp Leu Leu Ser Val Thr Leu Ala Ser Gly
65                  70                  75                  80
Ser Arg Cys Phe Ser Phe Leu Ser Val Ala Trp Gly Phe Val Ser Asp
                85                  90                  95
Val Asp Ile Gln Ser Glu Arg Phe Arg Ala Leu Gly Ser Ala Arg Phe
            100                 105                 110
Thr Leu Gly Thr Val Leu Gly Leu Ala Thr Leu His Thr Tyr Arg Gly
        115                 120                 125
Arg Leu Ser Tyr Leu Pro Ala Thr Val Glu Pro Ala Ser Pro Thr Pro
    130                 135                 140
Ala His Ser Leu Pro Arg Ala Lys Ser Glu Leu Thr Leu Thr Pro Asp
145                 150                 155                 160
Pro Ala Pro Pro Met Ala His Ser Pro Leu His Arg Ser Val Ser Asp
```

```
                        165                 170                 175
Leu Pro Leu Pro Leu Pro Gln Pro Ala Leu Ala Ser Pro Gly Ser Pro
              180                 185                 190
Glu Pro Leu Pro Ile Leu Ser Leu Asn Gly Gly Gly Pro Glu Leu Ala
              195                 200                 205
Gly Asp Trp Gly Gly Ala Gly Asp Ala Pro Leu Ser Pro Asp Pro Gln
      210                 215                 220
Leu Ser Ser Pro Pro Gly Ser Pro Lys Ala Ala Leu His Ser Pro Val
225                 230                 235                 240
Xaa Lys Lys Ala Pro Val Ile Pro Pro Asp Met
                  245                 250 251
```

```
      <210> 809
      <211> 174
      <212> Amino acid
      <213> Homo sapiens
```

```
      <400> 809
Lys Gly Val Pro Thr Leu Leu Met Ala Ala Gly Ser Phe Tyr Asp Ile
1                 5                 10                  15
Leu Ala Ile Thr Gly Phe Asn Thr Cys Leu Gly Ile Ala Phe Ser Thr
              20                  25                  30
Gly Ser Thr Val Phe Asn Val Leu Arg Gly Val Leu Glu Val Val Ile
              35                  40                  45
Gly Val Ala Thr Gly Ser Val Leu Gly Phe Phe Ile Gln Tyr Phe Pro
      50                  55                  60
Ser Arg Asp Gln Asp Lys Leu Val Cys Lys Arg Thr Phe Leu Val Leu
65                  70                  75                  80
Gly Leu Ser Val Leu Ala Val Phe Ser Ser Val His Phe Gly Phe Pro
              85                  90                  95
Gly Ser Gly Gly Leu Cys Thr Leu Val Met Ala Phe Leu Ala Gly Met
              100                 105                 110
Gly Trp Thr Ser Glu Lys Ala Glu Val Glu Lys Ile Ile Ala Val Ala
      115                 120                 125
Trp Asp Ile Phe Gln Pro Leu Leu Phe Gly Leu Ile Gly Ala Glu Val
      130                 135                 140
Ser Ile Ser Ser Leu Arg Pro Glu Thr Val Gly Leu Cys Val Ala Thr
145                 150                 155                 160
Val Gly Ile Ala Val Leu Ile Arg Ile Phe Asp Tyr Ile Phe
              165                 170                 174
```

```
      <210> 810
      <211> 104
      <212> Amino acid
      <213> Homo sapiens
```

```
      <400> 810
Leu Leu Lys Glu Val Val Val Gln Ala Ser Pro Val Cys Lys Thr Cys
1                 5                 10                  15
Cys Ser Gln Leu Val Arg Thr Pro Val Thr Phe Thr Glu Val Gln Asn
              20                  25                  30
Val Cys Arg Cys Ser Ala Gly Tyr Leu Ile Ser Val Cys Ser Tyr Thr
              35                  40                  45
Ser Ser Asp His Asn Gln Cys Tyr Ala Gly Thr Ala Ser Leu Ala Leu
```

447

```
              50                   55                   60
Leu Trp Ile Gly Gly Ile Leu Lys Gly Cys Leu Leu Trp Lys Gln Phe
 65                   70                   75                   80
Arg Trp Thr Glu Arg Ser His Trp Asn Phe Gly Tyr Trp Ala Leu Trp
                   85                   90                   95
Ser Pro Gly Asn Gly Asn Gly Cys
              100                  104
```

```
        <210> 811
        <211> 77
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 811
Ile Cys Thr Ser Thr Tyr Leu Gln Ile Phe Pro Gly Lys Pro Ser Cys
 1               5                   10                   15
Phe Met Cys Lys Gly Arg Leu Met Cys Ile Tyr Phe Ile Leu Trp Tyr
              20                   25                   30
Leu Gly His Tyr Thr Ser Leu His Trp Asn Trp Cys Arg Tyr Ile Ser
              35                   40                   45
Asp Pro Asn Val Asp Ala Cys Pro Asp Pro Arg Asn Ala Glu Val Ser
        50                   55                   60
Met Thr His Thr Val Pro Ala Leu Met Glu Leu Ile Asp
 65                   70                   75  77
```

```
        <210> 812
        <211> 194
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 812
Leu Glu Ser Leu Pro Gly Phe Lys Glu Ile Val Ser Arg Gly Val Lys
 1               5                   10                   15
Val Asp Tyr Leu Thr Pro Asp Phe Pro Ser Leu Ser Tyr Pro Asn Tyr
              20                   25                   30
Tyr Thr Leu Met Thr Gly Arg His Cys Glu Val His Gln Met Ile Gly
        35                   40                   45
Asn Tyr Met Trp Asp Pro Thr Thr Asn Lys Ser Phe Asp Ile Gly Val
    50                   55                   60
Asn Lys Asp Ser Leu Met Pro Leu Trp Trp Asn Gly Ser Glu Pro Leu
 65                   70                   75                   80
Trp Val Thr Leu Thr Lys Ala Lys Arg Lys Val Tyr Met Tyr Tyr Trp
              85                   90                   95
Pro Gly Cys Glu Val Glu Ile Leu Gly Val Arg Pro Thr Tyr Cys Leu
              100                  105                  110
Glu Tyr Lys Asn Val Pro Thr Asp Ile Asn Phe Ala Asn Ala Val Ser
              115                  120                  125
Asp Ala Leu Asp Ser Phe Lys Ser Gly Arg Ala Asp Leu Ala Ala Ile
              130                  135                  140
Tyr His Glu Arg Ile Asp Val Glu Gly His His Tyr Gly Pro Ala Ser
145                  150                  155                  160
Pro Gln Arg Lys Asp Ala Leu Lys Ala Val Asp Thr Val Leu Lys Tyr
              165                  170                  175
Met Thr Lys Trp Ile Gln Glu Arg Gly Leu Gln Asp Arg Leu Asn Val
```

```
                    180                    185                    190
Ile Ile
   194


        <210> 813
        <211> 116
        <212>Amino acid
        <213> Homo sapiens

        <220>  .
        <221> misc_feature
        <222> (1)...(116)
        <223> X = any amino acid or stop code




        <400> 813
Ala Arg Asp Phe His Pro Lys Gln Thr Leu Asp Phe Leu Arg Ser Asp
 1               5                  10                  15
Met Ala Asn Ser Lys Ile Thr Glu Glu Val Lys Arg Ser Ile Ala Gln
             20                  25                  30
Gln Tyr Leu Asp Leu Thr Val Ala Leu Glu Gln Val Asp Pro Asp Ala
          35                  40                  45
Glu Val Asp Ala Ala Pro Ser Thr Thr Ser Ser Cys Gly His Xaa Asp
       50                  55                  60
Ser His Ala Gly Ser Xaa Arg Val Leu Ser Leu Leu Gly Asp Xaa Gly
 65                  70                  75                  80
Pro Ala Xaa Thr Gly Ala Asn Ser Met Ala Gly Lys Leu Leu Leu Val
                 85                  90                  95
Ala Trp Leu Gly Phe Pro Asp Pro Phe Trp Gly Lys Glu Leu Ser Asp
             100                 105                 110
Pro Ala Phe Lys
        115 116


        <210> 814
        <211> 121
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(121)
        <223> X = any amino acid or stop code




        <400> 814
Lys Gln Ser Gly Asp Val Thr Cys Asn Cys Thr Asp Gly Arg Leu Ala
 1               5                  10                  15
Pro Ser Cys Leu Thr Cys Val Gly His Cys Ile Phe Gly Gly Tyr Cys
             20                  25                  30
Thr Met Asn Ser Lys Met Met Pro Glu Cys Gln Ser Pro Pro His Met
          35                  40                  45
Thr Gly Pro Arg Cys Glu Glu His Val Phe Ser Gln His Gln Pro Gly
       50                  55                  60
His Ile Thr Ser Ile Leu Ile Pro Met Leu Xaa Leu Leu Leu Leu Val
 65                  70                  75                  80
Leu Val Ala Gly Val Ile Phe Cys His Lys Arg Arg Val Gln Gly Ala
```

```
                           85                    90                    95
Lys Gly Phe Gln His Gln Arg Met Thr Asn Gly Ala Met Asn Ala Gln
                          100                   105                   110
Ile Ala Asn Pro Thr Tyr Lys Met Tyr
                          115                   120 121
```

```
        <210> 815
        <211> 86
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(86)
        <223> X = any amino acid or stop code
```

```
        <400> 815
Thr Val Glu Asn Ala Gly Arg Trp Leu Xaa Glu Glu Ala Glu Ile Gln
 .1               5                   10                  15
Ala Glu Leu Glu Arg Leu Glu Arg Val Arg Asn Leu His Ile Arg Glu
                20                  25                  30
Leu Lys Arg Ile Asn Asn Glu Asp Asn Ser Gln Phe Lys Asp His Pro
            35                  40                  45
Thr Leu Asn Glu Arg Tyr Leu Leu Leu His Leu Leu Gly Arg Gly Gly
    50                  55                  60
Phe Ser Glu Val Tyr Lys Val Met Tyr Gly Leu Phe Trp Phe Phe Tyr
65                  70                  75                  80
Thr Asn Val Ala Arg Ile
                85  86
```

```
        <210> 816
        <211> 130
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(130)
        <223> X = any amino acid or stop code
```

```
        <400> 816
Met Cys Glu Glu Phe Leu Val Met Gly Lys Gly Cys Ser Cys Val Phe
 1               5                   10                  15
Xaa Ile Leu Leu Ser Asn Pro Gln Met Trp Trp Leu Asn Asp Ser Asn
            20                  25                  30
Pro Glu Thr Asp Asn Arg Gln Glu Ser Pro Ser Gln Glu Asn Ile Asp
            35                  40                  45
Arg Val Ser Asp Met Ala Phe Val Pro Ser Ala Trp Thr Ala Ser Gly.
    50                  55                  60
Gly Val Ala Trp Gly Asn Leu Gly Glu Ser Gly Ser Arg Thr Gly Gly
65                  70                  75                  80
Val Arg Ala Glu Thr Leu Ala Pro Arg Leu Gln Val Xaa Pro Ala His
                85                  90                  95
Leu Arg Gly His Pro Arg Ser Asn Arg Gly Gln Gly Arg Pro Pro Trp
```

```
                   100                    105.                  110
Lys Ala Gly Lys Leu Gly Lys Cys Gln Glu Val Leu Phe Arg Phe Ala
        115                    120                    125
Ala Phe
    130
```

```
    <210> 817
    <211> 119
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(119)
    <223> X = any amino acid or stop code
```

```
    <400> 817
Phe Arg Ala Met Phe Leu Ala Val Gln His Asp Cys Arg Pro Met Asp
 1               5                  10                  15
Lys Ser Ala Gly Ser Gly His Lys Ser Glu Glu Lys Arg Glu Lys Met
        20                    25                    30
Lys Arg Thr Leu Leu Lys Asp Trp Lys Thr Arg Leu Ser Tyr Phe Leu
        35                    40                    45
Gln Asn Ser Ser Thr Pro Gly Lys Pro Lys Thr Gly Lys Lys Ser Lys
    50                    55                    60
Gln Gln Ala Phe Ile Lys Xaa Val Glu Asn Pro Glu Leu Ala Asn Ile
65                    70                    75                    80
Asn Ser Xaa Leu Leu Asn Xaa Lys Gly Glu Leu Xaa Xaa Ala Xaa Ala
                85                    90                    95
Asn Ile Gln Asn Leu Ser Cys Arg Pro Ser Pro Glu Glu Ala Gln Leu
            100                   105                   110
Trp Ser Glu Ala Phe Asp Glu
        115                   119
```

```
    <210> 818
    <211> 131
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(131)
    <223> X = any amino acid or stop code
```

```
    <400> 818
Gly Phe Phe Asn Phe Ser Ser Pro Lys Leu Lys Gly Trp Lys Ile Asn
 1               5                  10                  15
Ser Ser Leu Val Leu Glu Ile Arg Lys Asn Ile Leu Arg Phe Leu Asp
        20                    25                    30
Ala Glu Arg Asp Val Ser Val Val Lys Ser Ser Phe Pro Ser Lys Asp
        35                    40                    45
Ala Arg His Ser Ser Val His Arg Xaa Phe Thr Gln Leu His Trp Gly
    50                    55                    60
Pro Pro Ser His Thr Pro Ala Arg Pro Xaa Arg Gly Phe Phe Asn Phe
```

```
      65                    70                    75                    80
Ser Ser Pro Lys Leu Lys Gly Trp Lys Ile Asn Ser Ser Leu Val Leu
                    85                    90                    95
Glu Ile Arg Lys Asn Ile Leu Arg Phe Leu Asp Ala Glu Arg Asp Val
            100                   105                   110
Ser Val Val Lys Ser Ser Phe Pro Ser Lys Asp Ala Arg His Ser Ser
            115                   120                   125
Val His Arg
130 131
```

```
      <210> 819
      <211> 85
      <212>Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(85)
      <223> X = any amino acid or stop code
```

```
      <400> 819
Arg Ile Asp Asp Gln Gln Glu Leu Lys Arg Val Thr Xaa Tyr Ser Gln
1               5                   10                    15
Lys Glu Tyr Thr Lys Lys Lys Leu His Lys Lys Cys Asn Ile Ile Gln
            20                    25                    30
Ala Asp Ile Lys Pro Asp Asn Ile Leu Asp Asn Glu Ser Ile Thr Ile
            35                    40                    45
Leu Lys Leu Ser Asp Phe Gly Ser Ala Ser His Val Ala Asp Asn Asp
      50                    55                    60
Ile Thr Pro Ser Ser Ser Gln Thr Thr Ser Ala Ala Ser Ser Pro Pro
65                    70                    75                    80
Arg Thr Leu Arg Arg
                  85
```

```
      <210> 820
      <211> 44
      <212>Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(44)
      <223> X = any amino acid or stop code
```

```
      <400> 820
Ser Ser Lys Pro Trp Asp Xaa Ser Leu Ala Pro Lys His Ser Gly Xaa
1               5                   10                    15
Thr Lys Asn Met Asp Cys Tyr Cys Ile Ile Pro Thr Cys Ile Gly Arg
            20                    25                    30
Glu Arg Cys Tyr Gly Thr Cys Ile Gly Asp Thr Val
            35                    40                    44
```

```
      <210> 821
```

452

```
        <211> 105
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(105)
        <223> X = any amino acid or stop code
```

```
        <400> 821
Asn Ser Ser Lys Lys Leu Val Met Glu His Gln Trp Lys Lys Tyr Leu
1               5                   10                  15
Arg Arg Asn Tyr Gln Arg Met Leu Asn Arg Leu Ile Thr Leu Ile Gly
                20                  25                  30
Ser Cys Gly Val Leu Xaa Leu Ile Ser Thr Ile Pro Thr Ser Arg Leu
            35                  40                  45
Lys Phe Leu Lys Glu Thr Gly His Gly Thr Pro Met Glu Glu Ile Pro
        50                  55                  60
Glu Glu Glu Leu Ser Glu Asp Val Glu Gln Ile Asp His Ala Asp Arg
65                  70                  75                  80
Glu Leu Arg Arg Gly Gln Asn Leu Arg Cys Lys Gly Ile His Arg Leu
                85                  90                  95
Pro Thr His Ile Gln Val Gly Gln Asn
            100                 105
```

```
        <210> 822
        <211> 172
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(172)
        <223> X = any amino acid or stop code
```

```
        <400> 822
Lys Trp Met Leu Leu His Ser Phe Lys Ile Phe Cys Leu Ser Leu Tyr
1               5                   10                  15
Pro Gln Leu Xaa Cys Pro Phe Glu Phe Phe Ser His Ser Ala Thr Ile
                20                  25                  30
Phe His Glu Leu Val Tyr Lys Gln Thr Lys Ile Ile Ser Ser Asn Gln
            35                  40                  45
Glu Leu Ile Tyr Glu Gly Arg Arg Leu Val Leu Glu Pro Gly Arg Leu
        50                  55                  60
Ala Gln His Phe Pro Lys Thr Thr Glu Glu Asn Pro Ile Phe Val Val
65                  70                  75                  80
Ser Arg Glu Pro Leu Asn Thr Ile Gly Leu Ile Tyr Glu Lys Ile Ser
                85                  90                  95
Leu Pro Lys Val His Pro Arg Tyr Asp Leu Asp Gly Asp Ala Ser Met
            100                 105                 110
Ala Lys Ala Ile Thr Gly Val Val Cys Tyr Ala Cys Arg Ile Ala Ser
            115                 120                 125
Thr Leu Leu Leu Tyr Gln Glu Leu Met Arg Lys Gly Ile Arg Trp Leu
            130                 135                 140
Ile Glu Leu Ile Lys Asp Asp Tyr Asn Glu Thr Val His Lys Lys Thr
```

453

```
145                    150                   155                    160
Glu Val Val Ile Thr Leu Gly Phe Leu Val Ser Arg
                      165              170   172
```

```
        <210> 823
        <211> 104
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(104)
        <223> X = any amino acid or stop code
```

```
        <400> 823
Gly Thr Arg Lys Met Gly Pro Thr Val Ser Pro Ile Cys Leu Pro Gly
 1               5                   10                  15
Thr Trp Gly Asp Tyr Asn Leu Met Asp Gly Asp Leu Gly Leu Ile Ser
             20              25                  30
Gly Trp Gly Arg Thr Glu Lys Arg Asp Arg Ala Asp Arg Leu Lys Ala
         35                  40                  45
Gly Arg Ser Pro Ala Ala Gly Xaa Arg Lys Trp Glu Pro Gly Arg Gly
     50                  55                  60
Asp Pro Thr Trp Glu Glu Ser Glu Glu Asp Val His Lys Ser Lys Trp
 65                  70                  75                  80
Thr Arg Cys Val Asp Glu Lys Gly Ala Xaa Cys Xaa Thr Asp Asn Lys
                 85                  90                  95
Arg Pro Leu Arg Cys Gly Val Thr
             100              104
```

```
        <210> 824
        <211> 99
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(99)
        <223> X = any amino acid or stop code
```

```
        <400> 824
His Glu Leu Glu Asn Leu Ile Lys Ser Ala His Ser Tyr Ser Leu Tyr
 1               5                   10                  15
Xaa Gly Xaa Tyr Leu His Gly Ala Xaa Thr Ala Glu Pro Glu Ala Ser
             20              25                  30
Phe Cys Pro Arg Arg Gly Trp Asn Arg Gln Ala Gly Ala Ala Gly Ser
         35                  40                  45
Arg Met Asn Phe Arg Pro Gly Val Leu Ser Ser Arg Gln Leu Gly Leu
     50                  55                  60
Pro Gly Pro Pro Asp Gly Pro Asp Tyr Thr Val Tyr Tyr Pro Phe His
 65                  70                  75                  80
Arg Leu Ala Met Val Thr Ala Ala Ser Arg Leu Glu Arg Glu His Leu
                 85                  90                  95
Thr His Leu
```

454

99

```
<210> 825
<211> 111
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(111)
<223> X = any amino acid or stop code
```

```
<400> 825
Pro Val Pro Leu Pro His Pro Ile Leu Glu Val Cys Pro Gly Gln Xaa
 1               5               10               15
Glu Pro Gln Ser Ala Ile Ser Leu Thr Ala Phe Gln Val Gln Ala Gly
            20              25              30
Ala Ser Arg Ala Ser Pro Gly Pro Pro Ala Pro Ser Ser Ser Lys Pro
        35              40              45
Gly Arg Lys Ala Lys Val Ala Ser Pro Cys Pro Asp Arg Pro Ala Pro
    50              55              60
Pro Pro Thr Xaa Pro Arg Pro Ala Ala Ala Pro Gly Ser Glu Ser Ser
65              70              75              80
Pro Arg Pro Pro Arg Pro Arg Thr Gly Arg Arg Gln Gln Arg Ala His
            85              90              95
Ala Arg Arg Ala Ala Ala Arg Thr Ala Pro Trp Arg Pro Ser Cys
        100             105             110 111
```

```
<210> 826
<211> 95
<212>Amino acid
<213> Homo sapiens
```

```
<400> 826
His Glu Gly Arg Arg Arg Gly Trp Ala Ser Ala Ser Gln Arg Phe Leu
 1               5               10               15
Arg Asn Trp Ala Phe Leu Thr Pro Ser Lys Val Arg Arg Leu Lys Gly
            20              25              30
Gln Lys Ala Phe Gly Lys Leu Pro Ser His Ser Asp Thr Ser Leu Thr
        35              40              45
Ser Asp Leu Gly Phe His His Arg Phe Asn Pro Asn Ala Ser Ser Ser
    50              55              60
Phe Lys Pro Ser Gly Thr Lys Phe Ala Ile Gln Tyr Gly Thr Gly Arg
65              70              75              80
Val Asp Gly Ile Leu Ser Glu Asp Lys Leu Thr Val Ser Gly Leu
            85              90              95
```

```
<210> 827
<211> 33
<212>Amino acid
<213> Homo sapiens

<220>
```

```
<221> misc_feature
<222> (1)...(33)
<223> X = any amino acid or stop code
```

```
<400> 827
Gly Arg Asn Ile Met His Tyr Pro Asn Gly His Ala Ile Cys Ile Ala
1               5               10              15
Asn Gly His Cys Ile Ile Leu Xaa Asn Ser His Asn Ile Lys Val Trp
            20              25              30
Val
33
```

```
<210> 828
<211> 178
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(178)
<223> X = any amino acid or stop code
```

```
<400> 828
Ile Asn Leu Gly Asn Thr Cys Tyr Met Asn Ser Val Ile Xaa Ala Leu
1               5               10              15
Phe Met Ala Thr Asp Phe Arg Arg Gln Val Leu Ser Leu Asn Leu Asn
            20              25              30
Gly Cys Asn Ser Leu Met Lys Lys Leu Gln His Leu Phe Ala Phe Leu
            35              40              45
Ala His Thr Gln Arg Glu Ala Tyr Ala Pro Arg Ile Phe Phe Glu Ala
    50              55              60
Ser Arg Pro Pro Trp Phe Thr Pro Arg Ser Gln Gln Asp Cys Ser Glu
65              70              75              80
Tyr Leu Arg Phe Leu Leu Asp Arg Leu His Glu Glu Glu Lys Ile Leu
            85              90              95
Lys Val Gln Ala Ser His Lys Pro Ser Glu Ile Leu Glu Cys Ser Glu
        100             105             110
Thr Ser Leu Gln Glu Val Ala Ser Lys Ala Ala Val Leu Thr Glu Thr
    115             120             125
Pro Arg Thr Ser Asp Gly Glu Lys Thr Leu Ile Glu Lys Met Phe Gly
    130             135             140
Gly Lys Leu Arg Thr His Ile Arg Cys Leu Asn Cys Thr Ser Thr Ser
145             150             155             160
Gln Lys Val Glu Ala Phe Thr Asp Leu Ser Leu Ala Phe Trp Pro Ser
            165             170             175
Ser Ser
    178
```

```
<210> 829
<211> 43
<212>Amino acid
<213> Homo sapiens
```

```
<220>
```

```
<221> misc_feature
<222> (1)...(43)
<223> X = any amino acid or stop code
```

```
        <400> 829
Ala Arg Asp Asp Pro Arg Val Arg Leu Ser Leu Ser Pro Asn Phe Phe
1               5                   10                  15
Xaa Leu Ala Ser Lys Leu Gly Lys Gln Trp Thr Pro Leu Ile Ile Leu
            20                  25                  30
Ala Asn Ser Leu Ser Gly Thr Asn Met Gly Glu
            35                  40          43
```

```
        <210> 830
        <211> 259
        <212> Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(259)
        <223> X = any amino acid or stop code
```

```
        <400> 830
Met His Arg Ile Lys Leu Asn Asp Arg Met Thr Phe Pro Glu Glu Leu
1               5                   10                  15
Asp Met Ser Thr Phe Ile Asp Val Glu Asp Glu Lys Ser Pro Gln Thr
            20                  25                  30
Glu Ser Cys Thr Asp Ser Gly Ala Glu Asn Glu Gly Ser Cys His Ser
            35                  40                  45
Asp Gln Met Ser Asn Asp Phe Ser Asn Asp Asp Gly Val Asp Glu Gly
    50                  55                  60
Ile Cys Leu Glu Thr Asn Ser Gly Thr Glu Lys Ile Ser Lys Ser Gly
65                  70                  75                  80
Leu Glu Lys Asn Ser Leu Ile Tyr Glu Leu Phe Ser Val Met Val His
                85                  90                  95
Ser Gly Ser Ala Ala Gly Gly His Tyr Tyr Ala Cys Ile Lys Ser Phe
            100                 105                 110
Ser Asp Glu Gln Trp Tyr Ser Phe Asn Asp Gln His Val Ser Arg Ile
            115                 120                 125
Thr Gln Glu Asp Ile Lys Lys Thr His Gly Gly Ser Ser Gly Ser Arg
            130                 135                 140
Gly Tyr Tyr Ser Ser Ala Phe Ala Ser Ser Thr Asn Ala Tyr Met Leu
145                 150                 155                 160
Ile Tyr Arg Leu Lys Asp Pro Ala Arg Asn Ala Lys Phe Leu Glu Val
            165                 170                 175
Asp Glu Tyr Pro Glu His Ile Lys Asn Leu Val Gln Lys Glu Arg Glu
            180                 185                 190
Leu Glu Glu Gln Glu Lys Arg Gln Arg Glu Ile Glu Arg Asn Thr Cys
            195                 200                 205
Lys Ile Lys Leu Phe Cys Leu His Pro Thr Lys Gln Val Met Met Glu
            210                 215                 220
Asp Xaa Ile Glu Val His Lys Asp Lys Thr Leu Lys Glu Ala Val Glu
225                 230                 235                 240
Met Ala Tyr Lys Met Met Asp Leu Glu Glu Val Ile Pro Leu Asp Cys
                245                 250                 255
```

Cys Arg Leu
        259

<210> 831
<211> 200
<212>Amino acid
<213> Homo sapiens

<400> 831
Ser Val Met Pro Val Pro Ala Leu Cys Leu Leu Trp Ala Leu Ala Met
1   5   10   15
Val Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala
            20   25   30
Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu Gly
        35   40   45
Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu Thr Lys
    50   55   60
Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu Leu Leu Gly
65   70   75   80
Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu Leu Arg Ala Ser
                85   90   95
Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu Gln Leu Gln Ala Glu
            100   105   110
Ala Thr Ala Glu Val Leu Gly Glu Val Ala Gln Ala Gln Lys Val Leu
    115   120   125
Arg Asp Ser Val Gln Arg Leu Glu Val Gln Leu Arg Ser Ala Trp Leu
    130   135   140
Gly Pro Ala Tyr Arg Glu Phe Glu Val Leu Lys Ala His Ala Asp Lys
145   150   155   160
Gln Ser His Ile Leu Trp Ala Leu Thr Gly His Val Gln Arg Gln Arg
                165   170   175
Arg Glu Met Val Ala Gln Gln His Arg Leu Arg Gln Ile Gln Glu Arg
            180   185   190
Leu His Thr Ala Ala Leu Pro Ala
            195   200

<210> 832
<211> 225
<212>Amino acid
<213> Homo sapiens

<400> 832
Ile Thr Ser Val Asp Pro Arg Val Arg Gly Asn Ala Ser Thr Gly Tyr
1   5   10   15
Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Asp Gly Asp Glu Ser Asp
            20   25   30
Leu Trp Ser Cys Arg Asn Ser Gly Trp Gly Asn Asn Asp Cys Ser His
        35   40   45
Ser Glu Asp Val Gly Val Ile Cys Ser Asp Ala Ser Asp Met Glu Leu
    50   55   60
Arg Leu Val Gly Gly Ser Ser Arg Cys Ala Gly Lys Val Glu Val Asn
65   70   75   80
Val Gln Gly Ala Val Gly Ile Leu Cys Ala Asn Gly Trp Gly Met Asn
                85   90   95

458

```
Ile Ala Glu Val Val Cys Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg
            100                 105                 110
Val Ser Arg Glu Pro His Phe Thr Glu Arg Thr Leu His Ile Leu Met
        115                 120                 125
Ser Asn Ser Gly Cys Ala Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile
130                 135                 140
Arg Trp Glu Trp Lys Gln Thr Ala Cys His Leu Asn Met Glu Ala Ser
145                 150                 155                 160
Leu Ile Cys Ser Ala His Arg Gln Pro Arg Leu Val Gly Ala Asp Met
                165                 170                 175
Pro Cys Ser Gly Arg Val Glu Val Lys His Ala His Thr Trp Arg Ser
            180                 185                 190
Val Cys Asp Ser Asp Phe Ser Leu His Ala Ala Asn Val Leu Cys Arg
        195                 200                 205
Glu Leu Asn Cys Gly Asp Ala Ile Ser Leu Ser Val Gly Asp His Phe
210                 215                 220
Gly
225
```

```
        <210> 833
        <211> 206
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 833
Ser Asn Tyr Pro Ser Ser Arg Phe Arg Val Ala Gly Ile Thr Gly Val
1               5                   10                  15
Lys Leu Gly Met Arg Ser Ile Pro Ile Ala Thr Ala Cys Thr Ile Tyr
            20                  25                  30
His Lys Phe Phe Cys Glu Thr Asn Leu Asp Ala Tyr Asp Pro Tyr Leu
        35                  40                  45
Ile Ala Met Ser Ser Ile Tyr Leu Ala Gly Lys Val Glu Glu Gln His
    50                  55                  60
Leu Arg Thr Arg Asp Ile Ile Asn Val Ser Asn Arg Tyr Phe Asn Pro
65                  70                  75                  80
Ser Gly Glu Pro Leu Glu Leu Asp Ser Arg Phe Trp Glu Leu Arg Asp
                85                  90                  95
Ser Ile Val Gln Cys Glu Leu Leu Met Leu Arg Val Leu Arg Phe Gln
            100                 105                 110
Val Ser Phe Gln His Pro His Lys Tyr Leu Leu His Tyr Leu Val Ser
        115                 120                 125
Leu Gln Asn Trp Leu Asn Arg His Ser Trp Gln Arg Thr Pro Val Ala
        130                 135                 140
Val Thr Ala Trp Ala Leu Leu Arg Asp Ser Tyr His Gly Ala Leu Cys
145                 150                 155                 160
Leu Arg Phe Gln Ala Gln His Ile Ala Val Ala Val Leu Tyr Leu Ala
                165                 170                 175
Leu Gln Val Tyr Gly Val Glu Val Pro Ala Glu Val Glu Ala Asp Glu
            180                 185                 190
Ala Val Gly Trp Gln Ile Tyr Ala Met Asp Thr Glu Ile Pro
            195                 200                 205 206
```

```
        <210> 834
        <211> 86
        <212>Amino acid
        <213> Homo sapiens
```

<400> 834

```
Arg Gly Ser Arg His Ala Val His Gly Trp Ala Phe Gly Leu Leu Phe
1               5                   10                  15
Ile Asn Lys Glu Ser Val Val Met Ala Tyr Leu Phe Thr Thr Phe Asn
            20                  25                  30
Ala Phe Gln Gly Val Phe Ile Phe Val Phe His Cys Ala Leu Gln Lys
        35                  40                  45
Lys Val Arg Ser Arg Arg Gly Pro Gly Ser Gln Pro Pro Leu Glu Thr
    50                  55                  60
Phe Pro Gly Tyr Pro Gly Glu Gly Gly Glu Gly Gly Gly Asp Ser Gly
65              70                  75                  80
Ala Pro Ser Ser Pro Gln
            85   86
```

<210> 835
<211> 110
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(110)
<223> X = any amino acid or stop code

<400> 835

```
Ala Arg Lys Asp Asp Leu Pro Pro Asn Met Arg Phe His Glu Glu Lys
1               5                   10                  15
Arg Leu Asp Phe Glu Trp Thr Leu Lys Ala Gly Xaa Glu Lys Gly Xaa
            20                  25                  30
Pro Ser Lys Xaa Asn Lys Gly Trp Glu Gly Gln Glu Xaa Xaa Xaa Thr
        35                  40                  45
Val Arg Asp Xaa Gly Ile Ser Xaa Xaa Val Lys Pro Gln His Leu Ser
    50                  55                  60
Xaa Ala Leu Gln Met Ala Leu Lys Arg Val Tyr Thr Leu Leu Ser Ser
65              70                  75                  80
Trp Asn Cys Leu Glu Asp Phe Asp Gln Ile Phe Trp Gly Gln Lys Ser
            85                  90                  95
Ala Leu Ala Gly Gln Trp Phe Pro Glu Val Ser Ile Ile Pro
        100                 105                 110
```

<210> 836
<211> 70
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(70)
<223> X = any amino acid or stop code

<400> 836

```
Gly Lys Gln Gln Arg Glu Thr Leu Arg Arg Pro Ser Pro Thr Ile Ser
1               5                   10                  15
Val Gln Arg Ala Gly Ser Pro Glu His Ser Ser Ala Ser His Xaa His
            20                  25                  30
Ser Pro Cys Pro Ala Pro Gly Gln Arg Val Leu Pro Thr Ala Leu Cys
        35                  40                  45
Thr Leu Met Thr Ser Lys His Phe His Gly Cys Pro Leu Ala Gly Gln
    50                  55                  60
Gly Arg Ala Val Thr Leu
65                  70
```

```
<210> 837
<211> 473
<212> Amino acid
<213> Homo sapiens
```

```
<400> 837
Gly Val Cys Gly Leu Pro Arg Phe Cys Gly Ser Ile Ile Leu Cys His
1               5                   10                  15
Tyr Glu Met Ser Ser Leu Gly Ala Ser Phe Val Gln Ile Lys Phe Asp
            20                  25                  30
Asp Leu Gln Phe Phe Glu Asn Cys Gly Gly Gly Ser Phe Gly Ser Val
        35                  40                  45
Tyr Arg Ala Lys Trp Ile Ser Gln Asp Lys Glu Val Ala Val Lys Lys
    50                  55                  60
Leu Leu Lys Ile Glu Lys Glu Ala Glu Ile Leu Ser Val Leu Ser His
65                  70                  75                  80
Arg Asn Ile Ile Gln Phe Tyr Gly Val Ile Leu Glu Pro Pro Asn Tyr
                85                  90                  95
Gly Ile Val Thr Glu Tyr Ala Ser Leu Gly Ser Leu Tyr Asp Tyr Ile
            100                 105                 110
Asn Ser Asn Arg Ser Glu Glu Met Asp Met Asp His Ile Met Thr Trp
        115                 120                 125
Ala Thr Asp Val Ala Lys Gly Met His Tyr Leu His Met Glu Ala Pro
    130                 135                 140
Val Lys Val Ile His Arg Asp Leu Lys Ser Arg Asn Val Val Ile Ala
145                 150                 155                 160
Ala Asp Gly Val Leu Lys Ile Cys Asp Phe Gly Ala Ser Arg Phe His
            165                 170                 175
Asn His Thr Thr His Met Ser Leu Val Gly Thr Phe Pro Trp Met Ala
        180                 185                 190
Pro Glu Val Ile Gln Ser Leu Pro Val Ser Glu Thr Cys Asp Thr Tyr
        195                 200                 205
Ser Tyr Gly Val Val Leu Trp Glu Met Leu Thr Arg Glu Val Pro Phe
    210                 215                 220
Lys Gly Leu Glu Gly Leu Gln Val Ala Trp Leu Val Val Glu Lys Asn
225                 230                 235                 240
Glu Arg Leu Thr Ile Pro Ser Ser Cys Pro Arg Ser Phe Ala Glu Leu
            245                 250                 255
Leu His Gln Cys Trp Glu Ala Asp Ala Lys Lys Arg Pro Ser Phe Lys
        260                 265                 270
Gln Ile Ile Ser Ile Leu Glu Ser Met Ser Asn Asp Thr Ser Leu Pro
    275                 280                 285
Asp Lys Cys Asn Ser Phe Leu His Asn Lys Ala Glu Trp Arg Cys Glu
    290                 295                 300
Ile Glu Ala Thr Leu Glu Arg Leu Lys Lys Leu Glu Arg Asp Leu Ser
305                 310                 315                 320
Phe Lys Glu Gln Glu Leu Lys Glu Arg Glu Arg Arg Leu Lys Met Trp
            325                 330                 335
```

461

```
Glu Gln Lys Leu Thr Glu Gln Ser Asn Thr Pro Leu Leu Leu Pro Leu
            340                 345                 350
Ala Ala Arg Met Ser Glu Glu Ser Tyr Phe Glu Ser Lys Thr Glu Glu
            355                 360                 365
Ser Asn Ser Ala Glu Met Ser Cys Gln Ile Thr Ala Thr Ser Asn Gly
    370                 375                 380
Glu Gly His Gly Met Asn Pro Ser Leu Gln Ala Met Met Leu Met Gly
385                 390                 395                 400
Phe Gly Asp Ile Phe Ser Met Asn Lys Ala Gly Ala Val Met His Ser
                405                 410                 415
Gly Met Gln Ile Asn Met Gln Ala Lys Gln Asn Ser Ser Lys Thr Thr
            420                 425                 430
Ser Lys Arg Arg Gly Lys Lys Val Asn Met Ala Leu Gly Phe Ser Asp
            435                 440                 445
Phe Asp Leu Ser Glu Gly Asp Asp Asp Asp Asp Asp Asp Gly Glu Glu
    450                 455                 460
Glu Tyr Asn Asp Met Asp Asn Ser Glu
465                 470         473
```

```
    <210> 838
    <211> 48
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 838
Met Leu Trp Glu Thr Gly Cys Ser Ala Ala Cys Arg Val Thr Val Ser
1               5                   10                  15
Pro Thr Val Thr Phe Ala Thr Phe Ser Thr Arg Gly Ile Asp Ala Met
            20                  25                  30
Arg Pro Gly Pro Ser Phe Leu Trp Arg Gln Gln Leu Ser Gln Gly *
        35                  40                  45      47
```

```
    <210> 839
    <211> 116
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(116)
    <223> X = any amino acid or stop code
```

```
    <400> 839
Pro Thr Leu Gly Asp Gln Pro Asp Leu His Ser Ile Thr Arg Ala Ser
1               5                   10                  15
Arg Pro Lys Leu Cys Thr Arg Lys Asn Cys Asn Pro Leu Thr Ile Thr
            20                  25                  30
Val His Asp Pro Asn Ser Thr Gln Xaa Tyr Tyr Gly Met Ser Trp Glu
        35                  40                  45
Leu Arg Phe Tyr Ile Pro Gly Phe Asp Val Gly Thr Met Phe Thr Ile
    50                  55                  60
Gln Lys Ile Leu Val Ser Trp Ser Pro Lys Pro Ile Gly Pro Leu
65                  70                  75                  80
Thr Asp Leu Gly Asp Pro Met Phe Gln Lys Pro Pro Asn Lys Val Asp
```

462

```
                      85                    90                    95
Leu Thr Val Pro Pro Pro Phe Leu Val Ile Lys Asp Thr Leu Gln Lys
                     100                   105                   110
Phe Glu Lys Ile
        115 116
```

```
        <210> 840
        <211> 138
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(138)
        <223> X = any amino acid or stop code
```

```
        <400> 840
Ser Leu Asn Asn Val Thr Leu Pro Gln Ala Lys Thr Glu Lys Asp Phe
 1               5                   10                    15
Ile Gln Leu Cys Thr Pro Gly Val Ile Lys Gln Glu Lys Leu Gly Thr
            20                   25                    30
Val Tyr Cys Gln Ala Ser Ser Pro Gly Ala Asn Met Ile Gly Asn Lys
        35                   40                    45
Met Ser Ala Ile Ser Val His Gly Val Ser Thr Ser Gly Gly Gln Met
    50                   55                    60
Tyr His Tyr Asp Met Asn Thr Ala Ser Leu Ser Gln Gln Xaa Asp Gln
65               70                    75                        80
Lys Pro Ile Phe Asn Val Ile Pro Pro Ile Pro Val Gly Ser Glu Asn
                85                    90                    95
Trp Asn Arg Cys Gln Gly Ser Gly Asp Asp Asn Leu Thr Ser Leu Gly
            100                   105                   110
Thr Leu Asn Phe Pro Gly Arg Thr Val Ser Phe Ser Phe Glu Met Glu
        115                   120                   125
Ser Arg Ser Val Ala Gln Ala Gly Val Gln
    130                   135       138
```

```
        <210> 841
        <211> 82
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(82)
        <223> X = any amino acid or stop code
```

```
        <400> 841
Arg His Thr Gln Glu Cys Arg Cys Pro His Thr His Ile His Thr His
 1               5                   10                    15
Thr His Ser His Thr His Ser His Thr His Ser His Ser His Ser His
            20                   25         .        30
Thr Thr Pro Arg Cys Ser His Thr Gln Pro Pro His Ala Gln Ala Pro
        35                   40                    45
Ala Leu Cys Xaa Ser Xaa Glu Asp Arg Gly Gln Pro Thr Trp Lys Leu
```

```
        50                    55                  60
Cys Ala His Arg Pro Arg Leu Lys Val Ile Lys Glu Gly Gly Trp Leu
65                      70                  75                  80
Gly Gly
    82
```

```
    <210> 842
    <211> 58
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(58)
    <223> X = any amino acid or stop code
```

```
    <400> 842
Asn Tyr Ser Leu Ser Val Tyr Leu Val Arg Gln Leu Thr Ala Gly Thr
1               5                   10                  15
Leu Leu Gln Lys Leu Arg Ala Lys Gly Ile Arg Asn Pro Asp His Ser
            20                  25                  30
Arg Ala Leu Ser Glu Xaa His Leu Ser Ser Leu Pro His Leu Ile Trp
            35                  40                  45
Ile Gln Val Phe Leu Ala Leu Gln Pro Ser
        50                  55          58
```

```
    <210> 843
    <211> 230
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(230)
    <223> X = any amino acid or stop code
```

```
    <400> 843
Ala Thr Tyr Ile Val Asp Phe Gly Phe Ser Thr Thr Phe Arg Glu Gly
1               5                   10                  15
Gln Met Leu Thr Ala Phe Cys Gly Met Tyr Pro Tyr Val Ala Pro Glu
            20                  25                  30
Arg Ser Leu Gly Gln Ala Cys Gln Xaa Pro Ala Arg Asp Ile Gln Ser
            35                  40                  45
Leu Ser Val Ile Leu Tyr Phe Arg Asn Thr Val Gly Arg Arg Ala Arg
        50                  55                  60
Thr Leu Pro Phe Tyr Ser Ala Glu Ala Ser Lys Leu Gln Glu Lys Ile
65                  70                  75                  80
Leu Thr Gly Arg Tyr His Ala Pro Pro Leu Leu Ala Leu Gln Leu Asp
                85                  90                  95
Ser Leu Ile Lys Leu Leu Met Leu Asn Ala Arg Lys Cys Pro Ser Leu
                100                 105                 110
Xaa Leu Met Lys Asn Pro Trp Val Lys Ser Ser Gln Lys Met Pro Leu
    115                 120                 125
Ile Pro Tyr Glu Glu Pro Leu Arg Gly Pro Pro Gln Thr Ile Gln Leu
```

```
        130                    135                    140
Met Val Ala Met Gly Phe Gln Ala Lys Asn Ile Ser Val Ala Ile Ile
145                    150                    155                    160
Glu Arg Lys Phe Asn Tyr Pro Met Ala Thr Tyr Leu Ile Leu Glu His
                   165                    170                    175
Thr Lys Gln Glu Arg Lys Cys Ser Thr Ile Arg Glu Leu Ser Leu Pro
               180                    185                    190
Pro Gly Val Pro Thr Ser Pro Ser Pro Ser Thr Glu Leu Ser Thr Phe
           195                    200                    205
Pro Leu Ser Leu Met Arg Ala His Arg Glu Pro Ala Phe Asn Val Gln
       210                    215                    220
Pro Pro Glu Glu Ser Gln
225                    230
```

```
    <210> 844
    <211> 258
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(258)
    <223> X = any amino acid or stop code
```

```
    <400> 844
Ala Lys Gln Glu Leu Ala Lys Leu Met Arg Ile Glu Asp Pro Ser Leu
1                   5                      10                     15
Leu Asn Ser Arg Val Leu Leu His His Ala Lys Ala Gly Thr Ile Ile
               20                     25                     30
Ala Arg Gln Gly Asp Gln Asp Val Ser Leu His Phe Val Leu Trp Gly
           35                     40                     45
Cys Leu His Val Tyr Gln Arg Met Ile Asp Lys Ala Glu Asp Val Cys
       50                     55                     60
Leu Phe Val Ala Gln Pro Gly Glu Leu Val Gly Gln Leu Ala Val Leu
65                     70                     75                     80
Thr Gly Glu Pro Leu Ile Phe Thr Leu Arg Ala Gln Arg Asp Cys Thr
                   85                     90                     95
Phe Leu Arg Ile Ser Lys Ser Asp Phe Tyr Glu Ile Met Arg Ala Gln
               100                    105                    110
Pro Ser Val Val Leu Ser Ala Ala His Thr Val Ala Ala Arg Met Ser
           115                    120                    125
Pro Phe Val Arg Gln Met Asp Phe Ala Ile Asp Trp Thr Ala Val Glu
       130                    135                    140
Ala Gly Arg Ala Leu Tyr Arg Cys Ser Ser His Arg Ala Ala Gln Ala
145                    150                    155                    160
Arg Pro Arg Gly Gly Asp Leu Gly Val Val Arg Pro Cys Xaa Pro Pro
                   165                    170                    175
Arg Pro Leu Arg Gln Gly Asp Arg Ser Asp Cys Thr Tyr Ile Val Leu
               180                    185                    190
Asn Gly Arg Leu Arg Ser Val Ile Gln Arg Gly Ser Gly Lys Lys Glu
           195                    200                    205
Leu Val Gly Glu Tyr Gly Arg Gly Asp Leu Ile Gly Val Val Ser Ala
       210                    215                    220
Thr Pro Thr His Xaa Pro Leu Ala Phe Ser Arg Pro Val Pro Arg Gln
225                    230                    235                    240
Leu Thr Arg Ile Ile Pro Gly Asn Pro Gly Ser Gly Glu Val Phe Pro
                   245                    250                    255
Gly Ala
258
```

```
<210> 845
<211> 235
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(235)
<223> X = any amino acid or stop code
```

```
<400> 845
His Ala Ser Gly Trp Thr Pro Gly Thr Thr Gln Thr Leu Gly Gln Gly
1               5                   10                  15
Thr Ala Trp Asp Thr Val Ala Ser Thr Pro Gly Thr Ser Glu Thr Thr
            20                  25                  30
Ala Ser Ala Glu Gly Arg Arg Thr Pro Gly Ala Thr Arg Pro Ala Ala
        35                  40                  45
Pro Gly Thr Gly Ser Trp Ala Glu Gly Ser Val Lys Ala Pro Ala Pro
    50                  55                  60
Ile Pro Glu Ser Pro Pro Ser Lys Ser Arg Ser Met Ser Asn Thr Thr
65                  70                  75                  80
Glu Gly Val Trp Glu Gly Thr Arg Ser Ser Val Thr Asn Arg Ala Arg
                85                  90                  95
Ala Ser Lys Asp Arg Arg Glu Met Thr Thr Thr Lys Ala Asp Arg Pro
            100                 105                 110
Arg Glu Asp Ile Glu Gly Val Arg Ile Ala Leu Asp Ala Ala Lys Lys
        115                 120                 125
Val Leu Gly Thr Ile Gly Pro Pro Ala Leu Val Ser Glu Thr Leu Ala
    130                 135                 140
Trp Glu Ile Leu Pro Gln Ala Thr Pro Val Ser Lys Gln Gln Ser Gln
145                 150                 155                 160
Gly Ser Ile Gly Glu Thr Thr Pro Ala Ala Gly Met Trp Thr Leu Gly
                165                 170                 175
Thr Pro Ala Ala Asp Val Trp Ile Leu Gly Thr Pro Ala Ala Asp Val
            180                 185                 190
Trp Thr Ser Met Glu Ala Ala Ser Gly Glu Gly Ser Ala Ala Gly Asp
        195                 200                 205
Leu Asp Ala Ala Thr Gly Asp Arg Gly Pro Gln Ala Thr Leu Ser Gln
    210                 215                 220
Thr Pro Ala Val Xaa Pro Trp Gly Pro Pro Gly
225                 230                 235
```

```
<210> 846
<211> 134
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(134)
<223> X = any amino acid or stop code
```

```
<400> 846
```

```
Ala Gly Thr Ser Gly Thr Gly Asp Thr Gly Pro Gly Asn Thr Ala Val
 1               5                   10                  15
Ser Gly Thr Pro Val Val Ser Pro Gly Ala Thr Pro Gly Ala Pro Gly
            20                  25                  30
Ser Ser Thr Pro Gly Glu Ala Asp Ile Gly Asn Thr Ser Phe Gly Lys
            35                  40                  45
Ser Gly Thr Pro Thr Val Ser Ala Ala Ser Thr Thr Ser Ser Pro Val
    50                  55                  60
Ser Lys His Thr Asp Ala Ala Ser Ala Thr Ala Val Thr Ile Ser Gly
65                  70                  75                  80
Ser Lys Pro Gly Thr Pro Gly Thr Pro Gly Gly Ala Thr Ser Gly Gly
            85                  90                  95
Lys Ile Thr Pro Gly Ile Ala Xaa Pro Thr Leu Asp Gln Lys Ser Pro
            100                 105                 110
Cys Phe Ser Gly Tyr Gly Gly Tyr Phe Pro Val Asn Pro His Gln Asn
            115                 120                 125
Pro Cys Ala Asp Ser Leu
130             134
```

```
<210> 847
<211> 188
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(188)
<223> X = any amino acid or stop code
```

```
<400> 847
Arg Ala His Arg Cys Cys Leu Pro Leu Pro Ser Leu Ser Cys Glu Ile
 1               5                   10                  15
Gln Ile Gly Phe Ser Xaa Ser Ser Ile Phe Pro Gly Gln Xaa Ala Cys
            20                  25                  30
Pro Cys Ser Cys Cys Arg Ser Cys Arg Arg Asn Trp Pro Gln Ser Pro
            35                  40                  45
Arg Cys Pro His His Pro Pro Ala Pro Cys Ser Leu Leu Leu Ser Ser
    50                  55                  60
Cys Leu Pro Pro Pro Leu Ser Cys Ser Trp Arg Gly Thr Ser Gly Lys
65              70                  75                  80
Pro Pro Ser Gln Ser Pro Ala Ala Ser Arg Ser Met Arg Pro Arg Cys
            85                  90                  95
Ser Pro Arg Thr Ser Ser Leu Arg Gly Ala Ser Cys Arg Gly Pro Gly
            100                 105                 110
Gly Ser Ala Pro Ala Ala Ala Ser Gly Pro Arg Cys Arg Gly Cys Ser
            115                 120                 125
Arg Ser Pro Arg Arg Cys Ser Arg Ser Gly Cys Ala Ala Ala Ser Pro
    130             135                 140
Pro Arg Ser Gln Arg Arg Ser Pro Pro Leu Ser Pro Pro Pro Phe Pro
145             150                 155                 160
Thr Ser Gly Thr Leu Leu Leu Lys Thr Ser Arg Phe Gly Ser Ala Thr
            165                 170                 175
Arg Glu Xaa Ser Ser Pro Arg Pro Arg Pro Arg Pro
            180                 185             188
```

```
<210> 848
<211> 328
<212>Amino acid
```
```

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(328)
<223> X = any amino acid or stop code

<400> 848

Asp	Asp	Val	Pro	Pro	Pro	Ala	Pro	Asp	Leu	Tyr	Asp	Val	Pro	Pro	Gly
1				5					10					15	

Leu Arg Arg Pro Gly Pro Gly Thr Leu Tyr Asp Val Pro Arg Glu Arg
        20   25   30

Val Leu Pro Pro Glu Val Ala Asp Gly Gly Val Val Asp Ser Gly Val
        35   40   45

Tyr Ala Val Pro Pro Pro Ala Glu Arg Glu Ala Pro Ala Glu Gly Lys
    50   55   60

Arg Leu Ser Ala Ser Ser Thr Gly Ser Thr Arg Ser Ser Gln Ser Ala
65   70   75   80

Ser Ser Leu Glu Val Ala Gly Pro Gly Arg Glu Pro Leu Glu Leu Glu
            85   90   95

Val Ala Val Glu Ala Leu Ala Arg Leu Gln Gln Gly Val Ser Ala Thr
            100   105   110

Val Ala His Leu Leu Asp Leu Ala Gly Ser Ala Gly Ala Thr Gly Ser
        115   120   125

Trp Arg Ser Pro Ser Glu Pro Gln Glu Pro Leu Val Gln Asp Leu Gln
    130   135   140

Ala Ala Val Ala Ala Val Gln Ser Ala Val His Glu Leu Leu Glu Phe
145   150   155   160

Ala Arg Ser Ala Val Gly Asn Ala Ala His Thr Ser Asp Arg Ala Leu
            165   170   175

His Ala Lys Leu Ser Arg Gln Leu Gln Lys Met Glu Asp Val His Gln
        180   185   190

Thr Leu Val Ala His Gly Gln Ala Leu Asp Ala Gly Arg Gly Gly Ser
    195   200   205

Gly Ala Thr Leu Glu Asp Leu Asp Arg Leu Val Ala Cys Ser Arg Ala
    210   215   220

Val Pro Glu Asp Ala Lys Gln Leu Ala Ser Phe Leu His Gly Asn Ala
225   230   235   240

Ser Leu Leu Phe Arg Arg Thr Lys Ala Thr Ala Pro Gly Pro Glu Gly
            245   250   255

Gly Gly Thr Leu His Pro Asn Pro Thr Asp Lys Thr Ser Ser Ile Gln
        260   265   270

Ser Arg Pro Leu Pro Ser Pro Pro Lys Phe Thr Ser Gln Asp Ser Pro
    275   280   285

Asp Gly Gln Tyr Glu Asn Ser Glu Gly Gly Trp Met Glu Asp Tyr Asp
    290   295   300

Tyr Val His Leu Thr Gly Gly Arg Arg Ser Phe Xaa Lys Thr Gln Lys
305   310   315   320

Glu Leu Leu Gly Lys Arg Ala Ala
            325   328

<210> 849
<211> 98
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(98)

<223> X = any amino acid or stop code

<400> 849
Met Ala Thr Asp Glu Glu Asn Val Tyr Gly Leu Glu Glu Asn Ala Gln
1   5   10   15
Ser Arg Gln Glu Ser Thr Arg Arg Leu Ile Leu Val Gly Arg Thr Gly
            20   25   30
Ala Gly Lys Ser Ala Thr Gly Asn Ser Ile Leu Gly Gln Arg Arg Phe
            35   40   45
Phe Ser Arg Leu Gly Ala Thr Ser Val Thr Arg Ala Cys Thr Thr Gly
    50   55   60
Ser Arg Arg Trp Asp Lys Cys His Val Glu Val Val Asp Thr Pro Asp
65   70   75   80
Ile Phe Ser Ser Gln Val Ser Lys Thr Asp Pro Gly Cys Glu Glu Arg
                85   90   95
Xaa *
97

<210> 850
<211> 94
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(94)
<223> X = any amino acid or stop code

<400> 850
Thr Leu Gly Leu Arg Ser Leu Thr Lys Glu Gly Gly Gly Gly Gly Asp
1   5   10   15
Val Ala Ala Phe Glu Val Gly Thr Gly Ala Ala Ala Ser Arg Ala Leu
            20   25   30
Gly Gln Cys Gly Gln Leu Gln Lys Leu Ile Val Ile Phe Ile Gly Ser
            35   40   45
Leu Cys Gly Leu Cys Thr Lys Cys Ala Val Ser Asn Asp Leu Thr Gln
    50   55   60
Gln Glu Ile Gln Thr Pro Glu Ile Gln Gln Arg Asn Ala Xaa Cys Asp
65   70   75   80
Ser Arg Val Thr Phe Thr Asn Glu Gly Gly Arg Trp Trp Gly
                85   90   94

<210> 851
<211> 50
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(50)
<223> X = any amino acid or stop code

```
<400> 851
Phe Phe Phe Leu Val Glu Thr Arg Phe His His Ile Gly Gln Ala Gly
1               5                   10                  15
Leu Glu Leu Leu Thr Leu Ser Ile Lys Xaa Ser Ala Arg Leu Gly Leu
            20                  25                  30
Pro Lys Cys Trp Asp Asp Arg Arg Glu Pro Pro Tyr Leu Ala Gly Phe
        35                  40                  45
Met Ile
    50


    <210> 852
    <211> 143
    <212> Amino acid
    <213> Homo sapiens



    <400> 852
Arg Arg Ser Pro Pro Pro Ala Pro Pro Pro Leu Pro Ser Pro Leu Ser
1               5                   10                  15
Pro Pro Pro Arg Ala Pro Val Ser Pro Ala Ser Thr Met Pro Ile Leu
            20                  25                  30
Leu Phe Leu Ile Asp Thr Ser Ala Ser Met Asn Gln Arg Ser His Leu
        35                  40                  45
Gly Thr Thr Tyr Leu Asp Thr Ala Lys Gly Ala Val Glu Thr Phe Met
    50                  55                  60
Lys Leu Arg Ala Arg Asp Pro Ala Ser Arg Gly Asp Arg Tyr Met Leu
65                  70                  75                  80
Val Thr Phe Glu Glu Pro Pro Tyr Ala Ile Lys Ala Gly Trp Lys Glu
                85                  90                  95
Asn His Ala Thr Phe Met Asn Glu Leu Lys Asn Leu Gln Ala Glu Gly
            100                 105                 110
Leu Thr Thr Leu Gly Gln Ser Leu Arg Thr Ala Phe Asp Leu Leu Asn
        115                 120                 125
Leu Asn Arg Leu Val Thr Gly Ile Asp Asn Tyr Gly Gln Val Gly
    130                 135                 140     143


    <210> 853
    <211> 154
    <212> Amino acid
    <213> Homo sapiens



    <400> 853
Asn Cys Arg Thr Tyr Val Phe Cys Phe Val Leu Val Phe Arg Leu Leu
1               5                   10                  15
Phe Leu His Gly Ser Pro Leu Ser Pro Ser Leu Leu Ser Arg Ala Gly
            20                  25                  30
Leu Leu Cys Gly Ser Ala Glu Asn Pro Thr Pro Phe Leu Cys Gly Ile
        35                  40                  45
Thr Met Ala Ala Gly Val Ser Leu Leu Ala Leu Val Val Arg Val Ile
    50                  55                  60
Leu Ser Thr Ala Ile Leu Cys Pro Ser Gly Ala Ser Arg Arg Gln Arg
65                  70                  75                  80
Ser Ser Glu Val Glu Trp Gly Thr Asp Ser Gly Val Tyr Arg Leu Tyr
```

```
                    85                    90                    95
Cys Trp Arg Val Gly Phe Leu Gly Pro Gly Gly Glu Leu Arg Leu Gly
               100                   105                   110
Leu Ser Glu Ala Arg Gly Gly Arg Val Trp Gly Arg Gly Glu Lys Arg
               115                   120                   125
Cys Arg Val Trp Ala Val Arg Ser Leu Arg Lys Gly Phe Gly Ser Val
          130                   135                   140
Ala Ala Leu Arg Arg Gly Ile Trp Ala Gly
145                   150                   154
```

```
     <210> 854
     <211> 90
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(90)
     <223> X = any amino acid or stop code
```

```
     <400> 854
Val Thr Pro Thr Pro Pro Gln Tyr Tyr Thr Cys Ser Cys Val Leu Gly
 1               5                  10                   15
Phe Ile Ala Cys Ser Ile Phe Leu Gln Met Ser Leu Lys Pro Lys Val
               20                   25                   30
Met Leu Leu Thr Val Ala Leu Val Ala Cys Leu Val Leu Phe Asn Leu
          35                   40                   45
Ser Gln Cys Trp Gln Arg Asp Cys Cys Ser Gln Gly Leu Gly Asn Leu
     50                   55                   60
Thr Glu Pro Ser Gly Thr Asn Arg Xaa Gly Pro Ala Ala Val Ser Trp
65                   70                   75                   80
Ala Ser Leu Pro Ala Pro Ser Ser Cys Arg
               85                   90
```

```
     <210> 855
     <211> 61
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(61)
     <223> X = any amino acid or stop code
```

```
     <400> 855
Gly Lys Ala Gly Gly Ala Ala Gly Leu Phe Ala Lys Gln Val Gln Lys
 1               5                  10                   15
Lys Phe Ser Arg Ala Gln Glu Lys Xaa Thr Arg Arg Phe Gly Lys Thr
               20                   25                   30
Cys Gln Pro Glu Glu Arg Ala Arg Glu Glu Arg Gln Glu Gly Pro Glu
          35                   40                   45
Ile Glu Phe Gly Phe Ser Phe Phe Ser Leu Ser Leu Tyr
     50                   55                   60 61
```

```
<210> 856
<211> 779
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(779)
<223> X = any amino acid or stop code
```

```
<400> 856
Pro Lys Arg Leu Phe Leu Phe Gln Asp Val Asn Thr Leu Gln Gly Gly
1               5                  10                  15
Gly Gln Pro Val Val Thr Pro Ser Val Gln Pro Ser Leu Gln Pro Ala
            20                  25                  30
His Pro Ala Leu Pro Gln Met Thr Ser Gln Ala Pro Gln Pro Ser Val
        35                  40                  45
Thr Gly Leu Gln Ala Pro Ser Ala Ala Leu Met Gln Val Ser Ser Leu
    50                  55                  60
Asp Ser His Ser Ala Val Ser Gly Asn Ala Gln Ser Phe Gln Pro Tyr
65                  70                  75                  80
Ala Gly Met Gln Ala Tyr Ala Tyr Pro Gln Ala Ser Ala Val Thr Ser
                85                  90                  95
Gln Leu Gln Pro Val Arg Pro Leu Tyr Pro Ala Pro Leu Ser Gln Pro
            100                 105                 110
Pro His Phe Gln Gly Ser Gly Asp Met Ala Ser Phe Leu Met Thr Glu
        115                 120                 125
Ala Arg Gln His Asn Thr Glu Ile Arg Met Ala Val Ser Lys Val Ala
    130                 135                 140
Asp Lys Met Asp His Leu Met Thr Lys Val Glu Glu Leu Gln Lys His
145                 150                 155                 160
Ser Ala Gly Asn Ser Met Leu Ile Pro Ser Met Ser Val Thr Met Glu
                165                 170                 175
Thr Ser Met Ile Met Ser Asn Ile Gln Arg Ile Ile Gln Glu Asn Glu
            180                 185                 190
Arg Leu Lys Gln Glu Ile Leu Glu Lys Ser Asn Arg Ile Glu Glu Gln
        195                 200                 205
Asn Asp Lys Ile Ser Glu Leu Ile Glu Arg Asn Gln Arg Tyr Val Glu
    210                 215                 220
Gln Ser Asn Leu Met Met Glu Lys Arg Asn Asn Ser Leu Gln Thr Ala
225                 230                 235                 240
Thr Glu Asn Thr Gln Ala Arg Val Leu His Ala Glu Gln Glu Lys Ala
                245                 250                 255
Lys Val Thr Glu Glu Leu Ala Ala Ala Thr Ala Gln Val Ser His Leu
            260                 265                 270
Gln Leu Lys Met Thr Ala His Gln Lys Lys Glu Thr Glu Leu Gln Met
        275                 280                 285
Gln Leu Thr Glu Ser Leu Lys Glu Thr Asp Leu Leu Arg Gly Gln Leu
    290                 295                 300
Thr Lys Val Gln Ala Lys Leu Ser Glu Leu Gln Glu Thr Ser Glu Gln
305                 310                 315                 320
Ala Gln Ser Lys Phe Lys Ser Glu Lys Gln Asn Arg Lys Gln Leu Glu
                325                 330                 335
Leu Lys Val Thr Ser Leu Glu Glu Glu Leu Thr Asp Leu Arg Val Glu
            340                 345                 350
Lys Glu Ser Leu Glu Lys Asn Leu Ser Glu Arg Lys Lys Lys Ser Ala
        355                 360                 365
Gln Glu Arg Ser Gln Ala Glu Glu Glu Ile Asp Glu Ile Arg Lys Ser
    370                 375                 380
```

472

Tyr Gln Glu Glu Leu Asp Lys Leu Arg Gln Leu Leu Lys Lys Thr Arg
385   390   395   400
Val Ser Thr Asp Gln Ala Ala Ala Glu Gln Leu Ser Leu Val Gln Ala
                405   410   415
Glu Leu Gln Thr Gln Trp Glu Ala Lys Cys Glu His Leu Leu Ala Ser
                420   425   430
Ala Lys Asp Glu His Leu Gln Gln Tyr Gln Glu Val Cys Ala Gln Arg
            435   440   445
Asp Ala Tyr Gln Gln Lys Leu Val Gln Leu Gln Glu Lys Ser Val Cys
450   455   460
Phe Ala Cys Leu Ala Leu Gln Ala Gln Ile Thr Ala Leu Thr Lys Gln
465   470   475   480
Asn Glu Gln His Ile Lys Glu Leu Glu Lys Asn Lys Ser Gln Met Ser
                485   490   495
Gly Val Glu Ala Ala Ala Ser Asp Pro Ser Glu Lys Val Lys Lys Ile
                500   505   510
Met Asn Gln Val Phe Gln Ser Leu Arg Arg Glu Phe Glu Leu Glu Glu
            515   520   525
Ser Tyr Asn Gly Arg Thr Ile Leu Gly Thr Ile Met Asn Thr Ile Lys
            530   535   540
Met Val Thr Leu Gln Leu Leu Asn Gln Gln Glu Gln Glu Lys Glu Glu
545   550   555   560
Ser Ser Ser Glu Glu Glu Glu Glu Lys Ala Glu Glu Arg Pro Arg Arg
                565   570   575
Pro Ser Gln Glu Gln Ser Ala Ser Ala Ser Ser Gly Gln Pro Gln Ala
            580   585   590
Pro Leu Asn Arg Glu Arg Pro Glu Ser Pro Met Val Pro Ser Glu Gln
            595   600   605
Val Val Glu Glu Ala Val Pro Leu Pro Pro Gln Ala Leu Thr Thr Ser
610   615   620
Gln Asp Gly His Arg Arg Lys Gly Asp Ser Glu Ala Glu Ala Leu Ser
625   630   635   640
Glu Ile Lys Asp Gly Ser Leu Pro Pro Glu Leu Ser Cys Ile Pro Ser
                645   650   655
His Arg Val Leu Gly Pro Pro Thr Ser Ile Pro Pro Glu Pro Leu Gly
            660   665   670
Pro Val Ser Met Asp Ser Glu Cys Glu Glu Ser Leu Ala Ala Ser Pro
            675   680   685
Met Ala Ala Lys Pro Asp Asn Pro Ser Gly Lys Val Cys Val Gln Gly
            690   695   700
Lys Xaa Ala Pro Asp Gly Pro Thr Tyr Lys Glu Ser Ser Thr Arg Leu
705   710   715   720
Phe Pro Gly Phe Gln Asp Pro Glu Glu Gly Asp Pro Leu Ala Leu Gly
                725   730   735
Leu Glu Ser Pro Gly Glu Pro Gln Pro Pro Gln Leu Gln Gly Lys Val
            740   745   750
Asp Val His Xaa Val Pro Pro Val Pro His Lys Gly Ala Phe Gln Glu
            755   760   765
Gln Glu Gly Arg Phe Pro Gln Phe Cys Arg Glu
770   775   779

```
        <210> 857
        <211> 510
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(510)
        <223> X = any amino acid or stop code
```

```
<400> 857
Ser Glu Thr Ala Gln Gln Ile Ile Asp Arg Leu Arg Val Lys Leu Ala
1               5                   10                  15
Lys Glu Pro Gly Ala Asn Leu Phe Leu Met Ala Val Gln Asp Ile Arg
            20                  25                  30
Val Gly Gly Arg Gln Ser Asn Ala Ser Tyr Gln Tyr Thr Leu Leu Ser
        35                  40                  45
Asp Asp Leu Ala Ala Leu Arg Glu Trp Glu Pro Lys Ile Arg Lys Lys
    50                  55                  60
Leu Ala Thr Leu Pro Glu Leu Ala Asp Val Asn Ser Asp Gln Gln Asp
65                  70                  75                  80
Asn Gly Ala Glu Met Asn Leu Val Tyr Asp Arg Asp Thr Met Ala Arg
                85                  90                  95
Leu Gly Ile Asp Val Gln Ala Ala Asn Ser Leu Leu Asn Asn Ala Phe
            100                 105                 110
Gly Gln Arg Gln Ile Ser Thr Ile Tyr Gln Pro Met Asn Gln Tyr Lys
        115                 120                 125
Val Val Met Glu Val Asp Pro Arg Tyr Thr Gln Asp Ile Ser Ala Leu
    130                 135                 140
Glu Lys Met Phe Val Ile Asn Asn Glu Gly Lys Ala Ile Pro Leu Ser
145                 150                 155                 160
Tyr Phe Ala Lys Trp Gln Pro Ala Asn Ala Pro Leu Ser Val Asn His
                165                 170                 175
Gln Gly Leu Ser Ala Ala Leu Thr Ile Ser Phe Asn Leu Pro Thr Gly
            180                 185                 190
Lys Ser Leu Ser Asp Ala Ser Ala Ala Ile Asp Arg Ala Met Ser Gln
        195                 200                 205
Leu Gly Val Pro Ser Thr Val Arg Gly Ser Phe Ala Gly Pro Ala Gln
    210                 215                 220
Val Phe Gln Glu Thr Met Asn Ser Gln Val Ile Leu Ile Ile Ala Ala
225                 230                 235                 240
Ile Ala Thr Val Tyr Ile Val Leu Gly Ile Pro Tyr Glu Arg Tyr Val
                245                 250                 255
His Pro Pro Thr Ile Leu Leu Xaa Arg Pro Gly Ala Asn Leu Phe Leu
            260         .       265                 270
Met Ala Val Gln Asp Ile Arg Val Gly Gly Arg Gln Ser Asn Ala Ser
        275                 280                 285
Tyr Gln Tyr Thr Leu Leu Ser Asp Asp Leu Ala Ala Leu Arg Glu Trp
    290                 295                 300
Glu Pro Lys Ile Arg Lys Lys Leu Ala Thr Leu Pro Glu Leu Ala Asp
305                 310                 315                 320
Val Asn Ser Asp Gln Gln Asp Asn Gly Ala Glu Met Asn Leu Val Tyr
            325                 330                 335
Asp Arg Asp Thr Met Ala Arg Leu Gly Ile Asp Val Gln Ala Ala Asn
        340                 345                 350
Ser Leu Leu Asn Asn Ala Phe Gly Gln Arg Gln Ile Ser Thr Ile Tyr
    355                 360                 365
Gln Pro Met Asn Gln Tyr Lys Val Val Met Glu Val Asp Pro Arg Tyr
370                 375                 380
Thr Gln Asp Ile Ser Ala Leu Glu Lys Met Phe Val Ile Asn Asn Glu
385                 390                 395                 400
Gly Lys Ala Ile Pro Leu Ser Tyr Phe Ala Lys Trp Gln Pro Ala Asn
            405                 410                 415
Ala Pro Leu Ser Val Asn His Gln Gly Leu Ser Ala Ala Leu Thr Ile
        420                 425                 430
Ser Phe Asn Leu Pro Thr Gly Lys Ser Leu Ser Asp Ala Ser Ala Ala
    435                 440                 445
Ile Asp Arg Ala Met Ser Gln Leu Gly Val Pro Ser Thr Val Arg Gly
    450                 455                 460
Ser Phe Ala Gly Pro Ala Gln Val Phe Gln Glu Thr Met Asn Ser Gln
465                 470                 475                 480
Val Ile Leu Ile Ile Ala Ala Ile Ala Thr Val Tyr Ile Val Leu Gly
```

```
                        485                    490                        495
Ile Pro Tyr Glu Arg Tyr Val His Pro Pro Thr Ile Leu Leu
              500                    505                    510
```

```
        <210> 858
        <211> 137
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(137)
        <223> X = any amino acid or stop code
```

```
        <400> 858
Ile Ile Thr Pro Asp Ala Met Gly Cys Gln Lys Asp Ile Ala Glu Lys
 1               5                   10                  15
Ile Gln Lys Gln Gly Gly Asp Tyr Leu Phe Ala Val Lys Gly Asn Gln
              20                  25                  30
Gly Arg Leu Asn Lys Ala Phe Glu Glu Lys Phe Pro Leu Lys Glu Leu
         35                  40                  45
Asn Asn Pro Glu His Asp Ser Tyr Ala Ile Ser Glu Lys Ser His Gly
     50                  55                  60
Arg Glu Glu Ile Arg Leu His Ile Val Cys Asp Val Pro Asp Glu Leu
 65                  70                  75                      80
Ile Asp Phe Thr Phe Glu Trp Lys Gly Leu Lys Lys Leu Cys Val Ala
                 85                  90                  95
Val Ser Phe Arg Ser Ile Ile Ala Glu Gln Lys Lys Glu Pro Glu Met
             100                 105                 110
Thr Val Arg Tyr Asn Ile Ser Xaa Leu Gly Ile Ala Gly Asp Ile Ser
         115                 120                 125
Val Thr Ala Ile Ser Gly Thr Asp Asp
     130                 135     137
```

```
        <210> 859
        <211> 123
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(123)
        <223> X = any amino acid or stop code
```

```
        <400> 859
His Tyr Leu Lys Met Leu Thr Gln Ala Arg Arg Glu Val Ile Ile Ala
 1               5                   10                  15
Asn Ala Tyr Phe Phe Pro Gly Tyr Arg Phe Leu His Ala Leu Arg Lys
              20                  25                  30
Ala Ala Arg Arg Gly Val Arg Ile Lys Leu Ile Ile Gln Gly Glu Pro
         35                  40                  45
Asp Met Pro Ile Val Arg Val Gly Ala Arg Leu Leu Tyr Asn Tyr Leu
     50                  55                  60
Val Lys Gly Gly Val Gln Val Phe Glu Tyr Arg Arg Arg Pro Leu His
```

```
        65                      70                    75                    80
Gly Lys Val Ala Leu Met Asp Asp His Trp Ala Thr Val Gly Ser Ser
                            85                    90                    95
Asn Leu His Pro Val Ser Xaa Ser Gly Asn Leu Gln Ala Asn Val Ile
            100                     105                   110
Leu His Val Leu Arg Val Pro Thr Leu Asn Pro
            115                     120       123
```

```
    <210> 860
    <211> 190
    <212> Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(190)
    <223> X = any amino acid or stop code
```

```
    <400> 860
Cys Trp Ser Lys Ser Ala Ala Phe His Ser Lys Leu Ala Thr Thr Cys
  1                 5                  10                    15
Ile Val Pro Val Cys Ala Ala Gly His Cys Ser Ala Ala Trp Xaa Ser
                20                  25                    30
Leu Arg Pro Ile Glu Ala Leu Ala Lys Glu Val Arg Glu Leu Lys Xaa
            35                  40                      45
His Thr Arg Xaa Leu Leu Asn Pro Ala Thr Thr Arg Glu Leu Thr Ser
      50                  55                      60
Leu Gly Arg Asn Leu Asn Arg Leu Leu Lys Ser Glu Arg Glu Arg Tyr
 65                  70                    75                    80
Asp Lys Tyr Arg Thr Thr Leu Thr Asp Leu Thr His Ser Leu Lys Thr
                85                  90                      95
Pro Leu Ala Val Leu Gln Ser Thr Leu Arg Ser Leu Arg Ser Glu Lys
            100                     105                   110
Met Ser Val Ser Asp Ala Glu Pro Val Met Leu Glu Gln Ile Ser Arg
            115                     120                   125
Ile Ser Gln Gln Ile Gly Tyr Tyr Leu His Arg Ala Ser Met Arg Gly
      130                     135                   140
Gly Thr Leu Leu Ser Arg Glu Leu His Pro Val Ala Pro Leu Leu Asp
145                     150                     155                   160
Asn Leu Thr Ser Ala Leu Ile Lys Gly Lys Pro Arg Lys Gly Gly Asn
                165                     170                   175
Val Thr Val Phe Pro Phe Thr Ala Met Tyr Arg Asp Gly His
            180                     185                   190
```

```
    <210> 861
    <211> 241
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 861
Gly Asn Thr Val Met Phe Gln His Leu Met Gln Lys Arg Lys His Thr
  1                 5                  10                    15
Gln Trp Thr Tyr Gly Pro Leu Thr Ser Thr Leu Tyr Asp Leu Thr Glu
                20                  25                    30
```

```
Ile Asp Ser Ser Gly Asp Glu Gln Ser Leu Leu Glu Leu Ile Ile Thr
        35              40                  45
Thr Lys Lys Arg Glu Ala Arg Gln Ile Leu Asp Gln Thr Pro Val Lys
    50              55                  60
Glu Leu Val Ser Leu Lys Trp Lys Arg Tyr Gly Arg Pro Tyr Phe Cys
65              70                  75                  80
Met Leu Gly Ala Ile Tyr Leu Leu Tyr Ile Ile Cys Phe Thr Met Cys
            85                  90                  95
Cys Ile Tyr Arg Pro Leu Lys Pro Arg Thr Asn Asn Arg Thr Ser Pro
        100                 105                 110
Arg Asp Asn Thr Leu Leu Gln Gln Lys Leu Leu Gln Glu Ala Tyr Met
        115                 120                 125
Thr Pro Lys Asp Asp Ile Arg Leu Val Gly Glu Leu Val Thr Val Ile
    130                 135                 140
Gly Ala Ile Ile Ile Leu Leu Val Glu Val Pro Asp Ile Phe Arg Met
145                 150                 155                 160
Gly Val Thr Arg Phe Phe Gly Gln Thr Ile Leu Gly Gly Pro Phe His
            165                 170                 175
Val Leu Ile Ile Thr Tyr Ala Phe Met Val Leu Val Thr Met Val Met
            180                 185                 190
Arg Leu Ile Ser Ala Ser Gly Glu Val Val Pro Met Ser Phe Ala Leu
    195                 200                 205
Val Leu Gly Trp Cys Asn Val Met Tyr Phe Ala Arg Gly Phe Gln Met
    210                 215                 220
Leu Gly Pro Phe Thr Ile Met Ile Gln Lys Met Ile Phe Gly Asp Leu
225                 230                 235                 240
Met
241
```

```
        <210> 862
        <211> 45
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 862
Glu Lys Ala Ala Ala Ala Asn Ile Asp Glu Val Gln Lys Ser Asp Val
1               5                   10                  15
Ser Ser Thr Gly Gln Gly Val Ile Asp Lys Asp Ala Leu Gly Pro Met
            20                  25                  30
Met Leu Glu Val Ala His Leu His Phe Ser Ala Val Phe
            35                  40                  45
```

```
        <210> 863
        <211> 120
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 863
Leu Glu Val Pro Ser Glu Val Thr Pro Leu Gly Phe Ala Met Gln Ala
1               5                   10                  15
Thr Lys Thr Leu Leu Leu Arg Thr Cys Cys Leu Gln Glu Phe Asn Ile
            20                  25                  30
Met Glu Lys Asn Lys Gly Trp Ala Leu Leu Gly Gly Lys Asp Gly His
            35                  40                  45
```

```
Leu Gln Gly Leu Phe Leu Leu Ala Asn Ala Leu Leu Glu Arg Asn Gln
    50              55                  60
Leu Leu Ala Gln Lys Val Met Tyr Leu Leu Val Pro Leu Leu Asn Arg
65              70                  75                  80
Gly Asn Asp Lys His Lys Leu Thr Ser Ala Gly Phe Phe Val Glu Leu
-               85                  90                  95
Leu Arg Ser Pro Val Ala Lys Arg Leu Pro Ser Ile Tyr Ser Val Ala
            100                 105                 110
Arg Phe Lys Asp Trp Leu Gln Asp
            115                 120
```

```
<210> 864
<211> 124
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(124)
<223> X = any amino acid or stop code
```

```
<400> 864
Arg Pro Ala Pro Ala Pro Ser Ala Ala Pro Glu Glu Ala Pro Ser Pro
1               5                   10                  15
Gly Val Lys Gly Arg Gly Met Ala Lys Arg Arg Val Pro Ala Pro Val
            20                  25                  30
Trp Gly Gly Ala Gly Gly Gly Thr Lys Ser Ala Arg Arg Ala Ala Ala
            35                  40                  45
Ala Pro Asp Thr Glu Arg Ser Glu Glu Gly Gly Arg Ala Val Lys Glu
    50                  55                  60
Ala Tyr Pro Ser Ser Arg Gln Pro Pro Pro Pro Ser Pro Xaa Pro Leu
65                  70                  75                  80
Arg Cys Ala Arg Arg Cys His Pro Asn Leu Ala Pro Ser Met Pro Ile
                85                  90                  95
Ser Asn Arg Glu Gly Lys Gly Lys Arg Arg Glu Glu Lys Ile Arg Pro
            100                 105                 110
Leu Ser Pro Ala Ser Thr His Thr Ser Ala Arg Ala
            115                 120                 124
```

```
<210> 865
<211> 120
<212>Amino acid
<213> Homo sapiens
```

```
<400> 865
Leu Gln Gly Val His Gly Ser Ser Ser Thr Phe Cys Ser Ser Leu Ser
1               5                   10                  15
Ser Asp Phe Asp Pro Leu Glu Tyr Cys Ser Pro Lys Gly Asp Pro Gln
            20                  25                  30
Arg Val Asp Met Gln Pro Ser Val Thr Ser Arg Pro Arg Ser Leu Asp
            35                  40                  45
Ser Glu Val Pro Thr Gly Glu Thr Gln Val Ser Ser His Val His Tyr
    50                  55                  60
His Arg His Arg His His His Tyr Lys Lys Arg Phe Gln Arg His Gly
```

```
65                      70                  75                      80
Arg Lys Pro Gly Pro Glu Thr Gly Val Pro Gln Ser Arg Pro Pro Ile
                    85                  90                  95
Pro Arg Thr Gln Pro Gln Pro Glu Pro Pro Ser Pro Asp Gln Gln Val
            100                 105                 110
Thr Arg Ser Asn Ser Ala Ala Pro
        115                 120
```

```
<210> 866
<211> 82
<212> Amino acid
<213> Homo sapiens
```

```
<400> 866
Met Ala Asp Pro Asp Pro Arg Tyr Pro Arg Ser Ser Ile Glu Asp Asp
1               5                   10                  15
Phe Asn Tyr Gly Ser Ser Glu Ala Ser Asp Thr Val His Ile Arg Met
            20                  25                  30
Ala Phe Leu Arg Arg Val Tyr Ser Ile Leu Ser Leu Gln Asp Leu Leu
        35                  40                  45
Ala Thr Val Thr Ser Thr Asp Asn Leu Ala Phe Glu Asp Gly Arg Thr
    50                  55                  60
Asp Trp Leu Gln Arg Pro Asp Cys Val Ser Phe Lys Ile His Val Leu
65                  70                  75                  80
Pro Met
    82
```

```
<210> 867
<211> 60
<212> Amino acid
<213> Homo sapiens
```

```
<400> 867
Ala Gly Met Ser Val Val Val Pro Pro Ile Gly Ser Ser Tyr Leu
1               5                   10                  15
Gly Leu Ile Ser Gln Glu His Phe Pro Asn Glu Phe Thr Ser Gly Asp
            20                  25                  30
Gly Lys Lys Ala His Gln Asp Phe Gly Tyr Phe Tyr Gly Ser Ser Tyr
        35                  40                  45
Val Ala Ala Ser Asp Ser Ser Arg Thr Pro Gly Leu
    50                  55                  60
```

```
<210> 868
<211> 78
<212> Amino acid
<213> Homo sapiens
```

```
<400> 868
Val Ala Ala Ala Leu Thr Leu Phe Pro Gln Gln Leu Ser Pro Pro Gly
```

```
        1               5                    10                      15
Ala Trp Gly Leu Gly Leu Ser Ala Cys Phe Cys Cys Ala Glu Gly Phe
                20                    25                      30
Ser Arg Leu Asn Gln Gln Val Leu Ser Ser Ser Leu Leu Leu Leu Ser
        35                    40                      45
Arg Thr Asn Cys Pro Cys Lys Tyr Ser Phe Leu Asp Asn Leu Lys Lys
        50                    55                      60
Leu Thr Pro Arg Arg Asp Val Pro Thr Tyr Pro Lys Val Arg
65                    70                      75          78
```

```
        <210> 869
        <211> 119
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 869
Arg Asp Asp Ala Cys Leu Tyr Ser Pro Ala Ser Ala Pro Glu Val Ile
  1               5                    10                      15
Thr Val Gly Ala Thr Asn Ala Gln Asp Gln Pro Val Thr Leu Gly Thr
                20                    25                      30
Leu Gly Thr Asn Phe Gly Arg Cys Val Asp Leu Phe Ala Pro Gly Glu
        35                    40                      45
Asp Ile Ile Gly Ala Ser Ser Asp Cys Ser Thr Cys Phe Val Ser Gln
        50                    55                      60
Ser Gly Thr Ser Gln Ala Ala Ala His Val Ala Gly Ile Ala Ala Met
65                    70                      75                  80
Met Leu Ser Ala Glu Pro Glu Leu Thr Leu Ala Glu Leu Arg Gln Arg
                85                    90                      95
Leu Ile His Phe Ser Ala Lys Asp Val Ile Asn Glu Ala Trp Phe Pro
            100                    105                    110
Glu Asp Gln Arg Val Leu Thr
            115                    119
```

```
        <210> 870
        <211> 34
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 870
Leu Glu Ile Lys Phe Leu Glu Gln Val Asp Gln Phe Tyr Asp Asp Asn
  1               5                    10                      15
Phe Pro Met Glu Ile Arg His Leu Leu Ala Gln Trp Ile Glu Asn Gln
                20                    25                      30
Asp Trp
    34
```

```
        <210> 871
        <211> 154
        <212> Amino acid
        <213> Homo sapiens
```

<400> 871
Glu Ala Gly Asp Ala Asp Glu Asp Glu Ala Asp Ala Asn Ser Ser Asp
1   5   10   15
Cys Glu Pro Glu Gly Pro Val Glu Ala Glu Glu Pro Pro Gln Glu Asp
            20   25   30
Ser Ser Ser Gln Ser Asp Ser Val Glu Asp Arg Ser Glu Asp Glu Glu
        35   40   45
Asp Glu His Ser Glu Glu Glu Glu Thr Ser Gly Ser Ser Ala Ser Glu
    50   55   60
Glu Ser Glu Ser Glu Glu Ser Glu Asp Ala Gln Ser Gln Ser Gln Ala
65   70   75   80
Asp Glu Glu Glu Glu Asp Asp Asp Phe Gly Val Glu Tyr Leu Leu Ala
                85   90   95
Arg Asp Glu Glu Gln Ser Glu Ala Asp Ala Gly Ser Gly Pro Pro Thr
            100   105   110
Pro Gly Pro Thr Thr Leu Gly Pro Lys Lys Glu Ile Thr Asp Ile Ala
        115   120   125
Ala Ala Ala Glu Ser Leu Gln Pro Lys Gly Tyr Thr Leu Ala Thr Thr
    130   135   140
Gln Val Lys Thr Pro Ile Pro Leu Leu Leu
145   150   154

        <210> 872
        <211> 118
        <212>Amino acid
        <213> Homo sapiens

        <400> 872
Leu Lys Asn Leu Arg Glu Leu Leu Leu Glu Asp Asn Gln Leu Pro Gln
1   5   10   15
Ile Pro Ser Gly Leu Pro Glu Ser Leu Thr Glu Leu Ser Leu Ile Gln
            20   25   30
Thr Asn Ile Tyr Asn Ile Thr Lys Glu Gly Ile Ser Arg Leu Ile Asn
        35   40   45
Leu Lys Asn Leu Tyr Leu Ala Trp Asn Cys Tyr Phe Asn Lys Val Cys
    50   55   60
Glu Lys Thr Asn Ile Glu Asp Gly Val Phe Glu Thr Leu Thr Asn Leu
65   70   75   80
Glu Leu Leu Ser Leu Ser Phe Asn Ser Leu Ser His Val Pro Pro Lys
                85   90   95
Leu Pro Ser Ser Leu Arg Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys
            100   105   110
Tyr Ile Ser Glu Glu Asp
        115   118

        <210> 873
        <211> 42
        <212>Amino acid
        <213> Homo sapiens

        <400> 873
Met Arg Ser Gln Ala Leu Gly Gln Ser Ala Pro Ser Leu Thr Ala Ser

```
      1                 5                 10                    15
    Leu Lys Glu Leu Ser Leu Pro Arg Arg Gly Ser Phe Pro Val Cys Pro
                    20                    25                 30
    Asn Ala Gly Arg Thr Ser Pro Leu Gly  *
                35                    40  41
```

```
        <210> 874
        <211> 70
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 874
    Leu Leu Cys Val Cys Leu Pro Val Gly Ala Cys Pro Ser Leu Ser Leu
      1                 5                 10                    15
    Leu Thr Ala Pro Leu Asn Gln Leu Met Arg Cys Leu Arg Lys Tyr Gln
                    20                    25                 30
    Ser Arg Thr Pro Ser Pro Leu Leu His Ser Val Pro Ser Glu Ile Val
                35                    40                    45
    Phe Asp Phe Glu Pro Gly Pro Val Phe Arg Gly Ser Trp Ala Leu Leu
          50                    55                    60
    Ser Trp Ser Thr Arg Pro
     65                    70
```

```
        <210> 875
        <211> 41
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 875
    Gln Thr Pro Asp Lys Lys Gln Asn Asp Gln Arg Asn Arg Lys Arg Lys
      1                 5                 10                    15
    Ala Glu Pro Tyr Glu Thr Ser Gln Gly Ser Asn Asn Phe Val Ser Thr
                    20                    25                 30
    Lys Val Leu Asn Ser Asn Val Leu Arg
                35                    40  41
```

```
        <210> 876
        <211> 139
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 876
    Tyr Phe Ile Ile Lys Gly Met Val Glu Leu Val Pro Ala Ser Asp Thr
      1                 5                 10                    15
    Leu Arg Lys Ile Gln Val Glu Tyr Gly Val Thr Gly Ser Phe Lys Asp
                    20                    25                 30
    Lys Pro Leu Ala Glu Trp Leu Arg Lys Tyr Asn Pro Ser Glu Glu Glu
                35                    40                    45
    Tyr Glu Lys Ala Ser Glu Asn Phe Ile Tyr Ser Cys Ala Gly Cys Cys
```

```
            50                 55                 60
Val Ala Thr Tyr Val Leu Gly Ile Cys Asp Arg His Asn Asp Asn Ile
65                  70                 75                 80
Met Leu Arg Ser Thr Gly His Met Phe His Ile Asp Phe Gly Lys Phe
                    85                 90                 95
Leu Gly His Ala Gln Met Phe Gly Ser Phe Lys Arg Asp Arg Ala Pro
            100                105                110
Phe Val Leu Thr Ser Asp Met Ala Tyr Val Ile Asn Gly Gly Glu Lys
            115                120                125
Pro Thr Ile Arg Phe Gln Leu Phe Val Asp Leu
    130                135                139
```

```
<210> 877
<211> 350
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(350)
<223> X = any amino acid or stop code
```

```
        <400> 877
Pro Ser Pro Leu Pro Ser Leu Ser Leu Pro Pro Pro Val Ala Pro Gly
1               5                  10                 15
Gly Gln Glu Ser Pro Ser Pro His Thr Ala Glu Val Glu Ser Glu Ala
            20                 25                 30
Ser Pro Pro Pro Ala Arg Pro Leu Pro Gly Glu Ala Arg Leu Ala Pro
            35                 40                 45
Ile Ser Glu Glu Gly Lys Pro Gln Leu Val Gly Arg Phe Gln Val Thr
    50                 55                 60
Ser Ser Lys Asn Arg Leu Ser Leu Phe Pro Cys Ser Gln His Pro Pro
65                 70                 75                 80
Leu Ser Leu Val Leu Gln Asn Leu Gln Pro Leu Ser Ser Leu Gln Arg
                85                 90                 95
Ala Gln Ile Gln Arg Thr Val Pro Gly Gly Gly Pro Glu Thr Arg Glu
            100                105                110
Ala Leu Ala Glu Ser Asp Arg Ala Ala Glu Gly Leu Gly Ala Gly Val
            115                120                125
Glu Glu Glu Gly Asp Asp Gly Lys Glu Pro Gln Val Gly Gly Ser Pro
    130                135                140
Gln Pro Leu Ser His Pro Ser Pro Val Trp Met Asn Tyr Ser Tyr Ser
145                150                155                160
Ser Leu Cys Leu Ser Ser Glu Glu Ser Glu Ser Ser Gly Glu Asp Glu
                165                170                175
Glu Phe Trp Ala Glu Leu Gln Ser Leu Arg Gln Lys His Leu Ser Glu
            180                185                190
Val Glu Thr Leu Gln Thr Leu Gln Lys Lys Glu Ile Glu Asp Leu Tyr
            195                200                205
Ser Arg Leu Gly Lys Gln Pro Pro Gly Ile Val Ala Pro Ala Ala
    210                215                220
Met Leu Ser Ser Arg Gln Arg Arg Leu Ser Lys Gly Ser Phe Pro Thr
225                230                235                240
Ser Arg Arg Asn Ser Leu Gln Arg Ser Glu Pro Pro Gly Pro Gly Glu
                245                250                255
Thr Ala Gly His Pro Ala Ser Ile Phe Ser Leu Arg Pro Leu Ser Val
            260                265                270
Asp Cys Phe Ser Pro Gly Pro Gly Gly Leu Pro Arg Gly Asn Arg Pro
    275                280                285
```

```
Pro Leu Pro Thr Ser Pro Phe Leu Thr Xaa Cys Ser Pro Ser Pro His
    290             295             300
Thr Ala Glu Val Glu Ser Glu Ala Ser Pro Pro Pro Ala Arg Pro Leu
305             310             315             320
Pro Gly Glu Ala Arg Leu Ala Pro Ile Ser Glu Glu Gly Lys Pro Gln
                325             330             335
Leu Val Gly Arg Phe Pro Ser Asp Phe Ile Gln Gly Thr Gly
            340             345             350
```

```
<210> 878
<211> 112
<212> Amino acid
<213> Homo sapiens
```

```
<400> 878
Arg Arg Phe Val Ser Gln Glu Thr Gly Asn Leu Tyr Ile Ala Lys Val
1               5               10              15
Glu Lys Ser Asp Val Gly Asn Tyr Thr Cys Val Val Thr Asn Thr Val
            20              25              30
Thr Asn His Lys Val Leu Gly Pro Pro Thr Pro Leu Ile Leu Arg Asn
        35              40              45
Asp Gly Val Met Gly Glu Tyr Glu Pro Lys Ile Glu Val Gln Phe Pro
    50              55              60
Glu Thr Val Pro Thr Ala Lys Gly Ala Thr Val Lys Leu Glu Cys Phe
65              70              75              80
Ala Leu Gly Asn Pro Val Pro Thr Ile Ile Trp Arg Arg Ala Asp Gly
            85              90              95
Lys Pro Ile Ala Arg Lys Ala Arg Arg His Lys Ser Arg Val Gly Lys
        100             105             110     112
```

```
<210> 879
<211> 282
<212> Amino acid
<213> Homo sapiens
```

```
<400> 879
Met Leu Arg Thr Cys Tyr Val Leu Cys Ser Gln Ala Gly Pro Arg Ser
1               5               10              15
Arg Gly Trp Gln Ser Leu Ser Phe Asp Gly Gly Ala Phe His Leu Lys
            20              25              30
Gly Thr Gly Glu Leu Thr Arg Ala Leu Leu Val Leu Arg Leu Cys Ala
        35              40              45
Trp Pro Pro Leu Val Thr His Gly Leu Leu Leu Gln Ala Trp Ser Arg
    50              55              60
Arg Leu Leu Gly Ser Arg Leu Ser Gly Ala Phe Leu Arg Ala Ser Val
65              70              75              80
Tyr Gly Gln Phe Val Ala Gly Glu Thr Ala Glu Glu Val Lys Gly Cys
            85              90              95
Val Gln Gln Leu Arg Thr Leu Ser Leu Arg Pro Leu Leu Ala Val Pro
        100             105             110
Thr Glu Glu Glu Pro Asp Ser Ala Ala Lys Ser Gly Glu Ala Trp Tyr
115             120             125
```

```
Glu Gly Asn Leu Gly Ala Met Leu Arg Cys Val Asp Leu Ser Arg Gly
    130             135         140
Leu Leu Glu Pro Pro Ser Leu Ala Glu Ala Ser Leu Met Gln Leu Lys
145             150             155             160
Val Thr Ala Leu Thr Ser Thr Arg Leu Cys Lys Glu Leu Ala Ser Trp
            165             170             175
Val Arg Arg Pro Gly Ala Ser Leu Glu Leu Ser Pro Glu Arg Leu Ala
            180             185             190
Glu Ala Met Asp Ser Gly Gln Asn Leu Gln Val Ser Cys Leu Asn Ala
        195             200             205
Glu Gln Asn Gln His Leu Arg Ala Ser Leu Ser Arg Leu His Arg Val
    210             215             220
Ala Gln Tyr Ala Arg Ala Gln His Val Arg Leu Leu Val Asp Ala Glu
225             230             235             240
Tyr Thr Ser Leu Asn Pro Ala Leu Ser Leu Leu Val Ala Ala Leu Ala
            245             250             255
Val Arg Trp Asn Ser Pro Gly Glu Gly Gly Pro Trp Val Trp Asn Thr
            260             265             270
Tyr Gln Ala Cys Leu Lys Asp Thr Phe    *
        275             280 281
```

```
<210> 880
<211> 29
<212>Amino acid
<213> Homo sapiens
```

```
<400> 880
Pro His His Arg Ile Ala Gly Asp Thr Ala Ile Asp Lys Asn Ile His
1              5               10              15
Gln Ser Val Ser Glu Gln Ile Lys Lys Asn Phe Ala Lys
            20              25              29
```

```
<210> 881
<211> 45
<212>Amino acid
<213> Homo sapiens
```

```
<400> 881
Gln Met Thr Asn Pro Phe Phe Leu Cys Phe Thr Thr Met Ile Ser Asn
1              5               10              15
Cys Asn Phe Phe Lys Gly Pro Pro Gly Pro Pro Gly Glu Lys Gly Asp
            20              25              30
Arg Gly Pro Thr Gly Glu Ser Gly Pro Arg Gly Phe Pro
        35              40              45
```

```
<210> 882
<211> 54
<212>Amino acid
<213> Homo sapiens
```

```
      <400> 882
Asn Gly Ile Ile Ala Ser Phe Phe Leu Arg Thr Phe Ile Phe Cys Phe
1               5                   10                  15
Ile His Ile Gln Gly Cys Gln Ala Gly Gln Thr Ile Lys Val Gln Val
                20                  25                  30
Ser Phe Asp Leu Leu Ser Leu Met Phe Thr Phe Val Ser Pro Cys Thr
            35                  40                  45
Asn Asp Leu Ile Ile His
        50              54


      <210> 883
      <211> 479
      <212> Amino acid
      <213> Homo sapiens




      <400> 883
Lys Leu Ser Val Asn His Arg Arg Thr His Leu Thr Lys Leu Met His
1               5                   10                  15
Thr Val Glu Gln Ala Thr Leu Arg Ile Ser Gln Ser Phe Gln Lys Thr
                20                  25                  30
Thr Glu Phe Asp Thr Asn Ser Thr Asp Ile Ala Leu Lys Val Phe Phe
            35                  40                  45
Phe Asp Ser Tyr Asn Met Lys His Ile His Pro His Met Asn Met Asp
        50                  55                  60
Gly Asp Tyr Ile Asn Ile Phe Pro Lys Arg Lys Ala Ala Tyr Asp Ser
65                  70                  75                  80
Asn Gly Asn Val Ala Val Ala Phe Leu Tyr Tyr Lys Ser Ile Gly Pro
                85                  90                  95
Leu Leu Ser Ser Ser Asp Asn Phe Leu Leu Lys Pro Gln Asn Tyr Asp
            100                 105                 110
Asn Ser Glu Glu Glu Glu Arg Val Ile Ser Ser Val Ile Ser Val Ser
            115                 120                 125
Met Ser Ser Asn Pro Pro Thr Leu Tyr Glu Leu Glu Lys Ile Thr Phe
            130                 135                 140
Thr Leu Ser His Arg Lys Val Thr Asp Arg Tyr Arg Ser Leu Cys Ala
145                 150                 155                 160
Phe Trp Asn Tyr Ser Pro Asp Thr Met Asn Gly Ser Trp Ser Ser Glu
                165                 170                 175
Gly Cys Glu Leu Thr Tyr Ser Asn Glu Thr His Thr Ser Cys Arg Cys
            180                 185                 190
Asn His Leu Thr His Phe Ala Ile Leu Met Ser Ser Gly Pro Ser Ile
            195                 200                 205
Gly Ile Lys Asp Tyr Asn Ile Leu Thr Arg Ile Thr Gln Leu Gly Ile
        210                 215                 220
Ile Ile Ser Leu Ile Cys Leu Ala Ile Cys Ile Phe Thr Phe Trp Phe
225                 230                 235                 240
Phe Ser Glu Ile Gln Ser Thr Arg Thr Thr Ile His Lys Asn Leu Cys
                245                 250                 255
Cys Ser Leu Phe Leu Ala Glu Leu Val Phe Leu Val Gly Ile Asn Thr
            260                 265                 270
Asn Thr Asn Lys Leu Phe Cys Ser Ile Ile Ala Gly Leu Leu His Tyr
        275                 280                 285
Phe Phe Leu Ala Ala Phe Ala Trp Met Cys Ile Glu Gly Ile His Leu
        290                 295                 300
Tyr Leu Ile Val Val Gly Val Ile Tyr Asn Lys Gly Phe Leu His Lys
305                 310                 315                 320
Asn Phe Tyr Ile Phe Gly Tyr Leu Ser Pro Ala Val Val Val Gly Phe
                325                 330                 335
```

486

```
Ser Ala Ala Leu Gly Tyr Arg Tyr Tyr Gly Thr Thr Lys Val Cys Trp
            340                 345                 350
Leu Ser Thr Glu Asn Asn Phe Ile Trp Ser Phe Ile Gly Pro Ala Cys
            355                 360                 365
Leu Ile Ile Leu Val Asn Leu Leu Ala Phe Gly Val Ile Ile Tyr Lys
        370                 375                 380
Val Phe Arg His Thr Ala Gly Leu Lys Pro Glu Val Ser Cys Phe Glu
385                 390                 395                 400
Asn Ile Arg Ser Cys Ala Arg Gly Ala Leu Ala Leu Leu Phe Leu Leu
                405                 410                 415
Gly Thr Thr Trp Ile Phe Gly Val Leu His Val Val His Ala Ser Val
            420                 425                 430
Val Thr Ala Tyr Leu Phe Thr Val Ser Asn Ala Phe Gln Gly Met Phe
        435                 440                 445
Ile Phe Leu Phe Leu Cys Val Leu Ser Arg Lys Ile Gln Glu Glu Tyr
    450                 455                 460
Tyr Arg Leu Phe Lys Asn Val Pro Cys Cys Phe Gly Cys Leu Arg
465                 470                 475         479
```

```
        <210> 884
        <211> 143
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 884
Gly Thr Arg Glu Ala Ala Pro Ser Arg Phe Met Phe Leu Leu Phe Leu
  1             5                 10                  15
Leu Thr Cys Glu Leu Ala Ala Glu Val Ala Ala Glu Val Glu Lys Ser
            20                  25                  30
Ser Asp Gly Pro Gly Ala Ala Gln Glu Pro Thr Trp Leu Thr Asp Val
            35                  40                  45
Pro Ala Ala Met Glu Phe Ile Ala Ala Thr Glu Val Ala Val Ile Gly
    50                  55                  60
Phe Phe Gln Asp Leu Glu Ile Pro Ala Val Pro Ile Leu His Ser Met
65                  70                  75                  80
Val Gln Lys Phe Pro Gly Val Ser Phe Gly Ile Ser Thr Asp Ser Glu
            85                  90                  95
Val Leu Thr His Tyr Asn Ile Thr Gly Asn Thr Ile Cys Leu Phe Arg
        100                 105                 110
Leu Val Asp Asn Glu Gln Leu Asn Leu Glu Asp Glu Asp Ile Glu Ser
        115                 120                 125
Ile Asp Ala Thr Lys Leu Ser Arg Phe Ile Glu Ile Asn Ser Leu
    130                 135                 140         143
```

```
        <210> 885
        <211> 52
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 885
Asp Glu Thr Ser Gly Leu Ile Val Arg Glu Val Ser Ile Glu Ile Ser
  1             5                 10                  15
Arg Gln Gln Val Glu Glu Leu Phe Gly Pro Glu Asp Tyr Trp Cys Gln
            20                  25                  30
```

```
Cys Val Ala Trp Ser Ser Ala Gly Thr Thr Lys Ser Arg Lys Ala Tyr
        35              40                  45
Val Arg Ile Ala
    50      52


    <210> 886
    <211> 40
    <212>Amino acid
    <213> Homo sapiens




    <400> 886
Gly Thr Arg Ser Ile His Val Lys Leu Asp Val Gly Lys Leu His Thr
1               5               10                  15
Gln Pro Lys Leu Ala Ala Gln Leu Arg Met Val Asp Asp Gly Ser Gly
        20              25                  30
Lys Val Glu Gly Leu Pro Gly Ile
        35              40


    <210> 887
    <211> 177
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(177)
    <223> X = any amino acid or stop code




    <400> 887
Xaa Cys Gly Glu Asp Gly Ser Phe Thr Gln Val Gln Cys His Thr Tyr
1               5               10                  15
Thr Gly Tyr Cys Trp Cys Val Thr Pro Asp Gly Lys Pro Ile Ser Gly
        20              25                  30
Ser Ser Val Gln Asn Lys Thr Pro Val Cys Ser Gly Ser Val Thr Asp
        35              40                  45
Lys Pro Leu Ser Gln Gly Asn Ser Gly Arg Lys Asp Asp Gly Ser Lys
    50              55                  60
Pro Thr Pro Thr Met Glu Thr Gln Pro Val Phe Asp Gly Asp Glu Ile
65              70                  75                  80
Thr Ala Pro Thr Leu Trp Ile Lys His Leu Val Ile Lys Asp Ser Lys
            85                  90                  95
Leu Asn Asn Thr Asn Ile Arg Asn Ser Glu Lys Val Tyr Ser Cys Asp
            100                 105                 110
Gln Glu Arg Gln Ser Ala Leu Glu Glu Ala Gln Gln Asn Pro Arg Glu
        115                 120                 125
Gly Ile Val Ile Pro Glu Cys Ala Pro Gly Gly Leu Tyr Lys Pro Val
        130                 135                 140
Gln Cys His Gln Ser Thr Gly Tyr Cys Trp Cys Val Leu Val Asp Thr
145                 150                 155                 160
Gly Arg Pro Leu Pro Gly Thr Ser Thr Arg Tyr Val Met Pro Ser Xaa
            165                 170                 175 176
    *
```

<210> 888
<211> 48
<212>Amino acid
<213> Homo sapiens

<400> 888

Val	Leu	Gln	Leu	Ile	Lys	Ser	Gln	Lys	Phe	Leu	Asn	Lys	Leu	Val	Ile
1				5					10					15	
Leu	Val	Glu	Thr	Glu	Lys	Glu	Lys	Ile	Leu	Arg	Lys	Glu	Tyr	Val	Phe
			20					25					30		
Ala	Asp	Ser	Lys	Val	Ser	Asp	Ser	Lys	Leu	Leu	Lys	Trp	Ala	Val	Arg
		35				40					45				48

<210> 889
<211> 316
<212>Amino acid
<213> Homo sapiens

<400> 889

Arg	Arg	Leu	Ser	Leu	Leu	Asp	Leu	Gln	Leu	Gly	Pro	Leu	Gly	Arg	Asp
1				5					10					15	
Pro	Pro	Gln	Glu	Cys	Ser	Thr	Phe	Ser	Pro	Thr	Asp	Ser	Gly	Glu	Glu
			20					25					30		
Pro	Gly	Gln	Leu	Ser	Pro	Gly	Val	Gln	Phe	Gln	Arg	Arg	Gln	Asn	Gln
			35					40					45		
Arg	Arg	Phe	Ser	Met	Glu	Asp	Val	Ser	Lys	Arg	Leu	Ser	Leu	Pro	Met
		50					55					60			
Asp	Ile	Arg	Leu	Pro	Gln	Glu	Phe	Leu	Gln	Lys	Leu	Gln	Met	Glu	Ser
65					70					75					80
Pro	Asp	Leu	Pro	Lys	Pro	Leu	Ser	Arg	Met	Ser	Arg	Arg	Ala	Ser	Leu
			85					90					95		
Ser	Asp	Ile	Gly	Phe	Gly	Lys	Leu	Glu	Thr	Tyr	Val	Lys	Leu	Asp	Lys
			100					105					110		
Leu	Gly	Glu	Gly	Thr	Tyr	Ala	Thr	Val	Phe	Lys	Gly	Arg	Ser	Lys	Leu
			115					120					125		
Thr	Glu	Asn	Leu	Val	Ala	Leu	Lys	Glu	Ile	Arg	Leu	Glu	His	Glu	Glu
			130					135					140		
Gly	Ala	Pro	Cys	Thr	Ala	Ile	Arg	Glu	Val	Ser	Leu	Leu	Lys	Asn	Leu
145					150					155					160
Lys	His	Ala	Asn	Ile	Val	Thr	Leu	His	Asp	Leu	Ile	His	Thr	Asp	Arg
				165					170					175	
Ser	Leu	Thr	Leu	Val	Phe	Glu	Tyr	Leu	Asp	Ser	Asp	Leu	Lys	Gln	Tyr
			180					185					190		
Leu	Asp	His	Cys	Gly	Asn	Leu	Met	Ser	Met	His	Asn	Val	Lys	Val	Arg
			195					200					205		
Pro	Arg	Gly	Gln	Gly	Pro	Pro	Ile	Leu	Ala	Ala	Thr	Cys	Pro	Glu	Ala
		210					215					220			
Gln	Cys	Gly	Asp	Pro	Leu	Ser	Pro	Pro	Gly	Ile	Arg	Leu	Leu	Arg	Trp
225					230					235					240
Leu	Lys	Pro	Ser	His	Val	Gly	Lys	Arg	Glu	Arg	Ala	Met	Pro	Ser	Thr
				245					250					255	
Ser	Pro	Gly	Thr	Gly	Leu	Ser	Ala	Leu	Pro	Gln	Glu	Gln	Thr	His	Thr

489

```
                260                 265                 270
Val Cys His Cys Leu Ala Val Gly Ile Lys Pro Thr Leu Asn Ser Glu
        275                 280                 285
His Gln Phe Pro Ser Leu Ser Asn Gly Ser Val Ser Tyr Leu Pro Lys
    290                 295                 300
Cys Arg Glu Ala Ser Gly Glu Ala Arg Gly Tyr Glu
305                 310                 315 316


        <210> 890
        <211> 34
        <212>Amino acid
        <213> Homo sapiens




        <400> 890
His Glu Arg His Glu Pro Ser Pro Thr Ala Leu Ala Phe Gly Asp His
 1               5                 10                  15
Pro Ile Val Gln Pro Lys Gln Leu Ser Phe Lys Ile Ile Gln Val Asn
            20                  25                  30
Asp Asn
    34


        <210> 891
        <211> 68
        <212>Amino acid
        <213> Homo sapiens




        <400> 891
Ala Arg Gly Pro Ser Leu Leu Ser Glu Phe His Pro Gly Ser Asp Arg
 1               5                 10                  15
Pro Gln Glu Arg Arg Thr Ser Tyr Glu Pro Ile His Pro Gly Pro Ser
            20                  25                  30
Pro Val Asp His Asp Ser Leu Glu Ser Lys Arg Pro Arg Leu Glu Gln
        35                  40                  45
Ala Ser Asp Ser His Tyr Gln Gly His Ile Thr Gly Glu Ser Leu Pro
    50                  55                  60
Gly Arg Val His
65          68


        <210> 892
        <211> 38
        <212>Amino acid
        <213> Homo sapiens




        <400> 892
Gly Thr Arg Lys Glu Glu Phe Ser Ala Glu Glu Asn Phe Leu Ile Leu
 1               5                 10                  15
Thr Glu Met Ala Thr Asn His Val Gln Val Leu Val Glu Phe Thr Lys
            20                  25                  30
Lys Leu Pro Gly Ile Phe
```

35   38

<210> 893
<211> 195
<212>Amino acid
<213> Homo sapiens

<400> 893
His Thr His Lys Leu Val Ala Pro Arg Pro Gly Leu Pro Pro Thr Ser
1   5   10   15
Gln Trp Pro Arg Asp Ala Gly Arg Gln Ala Ser Gly Gly Leu Pro Ser
            20   25   30
Leu Ser Thr Gly Pro Pro Lys Gly Pro Arg Asp Gly Leu Ala Arg Gly
            35   40   45
His Pro Ala Glu Trp Leu Ala Gly Ser Pro Gly Asn Asn Ser Pro Thr
        50   55   60
Gln Gly Ser Leu Pro Pro Gln Leu Asp Leu Tyr Ala Gly Ala Leu Phe
65   70   75   80
Val His Ile Cys Leu Gly Trp Asn Phe Tyr Leu Ser Thr Ile Leu Thr
                85   90   95
Leu Gly Ile Thr Ala Leu Tyr Thr Ile Ala Gly Met Val Pro Ala Ala
            100   105   110
Gly Arg Ser Thr Gln Gly Thr Cys Lys Gly Val Arg Arg Pro Pro Pro
        115   120   125
Pro Thr Gly Pro Arg Glu Gln Pro Arg Lys Trp Pro Gln Gln Glu Pro
    130   135   140
Gln Lys Phe Leu Pro Val Ser Leu Leu Pro Gly Ala Arg Ala Pro Ser
145   150   155   160
Ser Asn Leu Ala Ser Thr Gly Arg Gly Pro Gly Cys Cys Asn Leu His
                165   170   175
Gly Arg Pro Ala Asp Ala His His Gly Gly Gly Gly Cys His Pro Asp
            180   185   190
Asn Gln Arg
        195

<210> 894
<211> 87
<212>Amino acid
<213> Homo sapiens

<400> 894
Met Val Asn His Ser Leu Gln Glu Thr Ser Glu Gln Asn Val Ile Leu
1   5   10   15
Gln His Thr Leu Gln Gln Gln Gln Met Leu Gln Gln Glu Thr Ile
            20   25   30
Arg Asn Gly Glu Leu Glu Asp Thr Gln Thr Lys Leu Glu Lys Gln Val
        35   40   45
Ser Lys Leu Glu Gln Glu Leu Gln Lys Gln Arg Glu Ser Ser Ala Glu
    50   55   60
Lys Leu Arg Lys Met Glu Glu Lys Cys Glu Ser Ala Ala His Glu Ala
65   70   75   80
Asp Leu Lys Arg Gln Lys   *
            85 86

491

```
        <210> 895
        <211> 49
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(49)
        <223> X = any amino acid or stop code




        <400> 895
Val Cys Pro Lys Trp Cys Arg Phe Leu Thr Met Leu Gly His Cys Cys
 1               5                  10                  15
Tyr Phe Trp His Val Trp Pro Ala Ser Xaa Ala Leu Ser Ala Gly Pro
            20                  25                  30
Thr Pro Thr Ser Arg Ser Phe Ser Pro Ser Pro Leu Arg Ser Ile Ser
        35                  40                  45
Thr
49



        <210> 896
        <211> 128
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(128)
        <223> X = any amino acid or stop code




        <400> 896
Met Arg Gly Pro Pro Val Leu Leu Leu Gln Ala Ala Pro Met Glu Cys
 1               5                  10                  15
Pro Val Pro Gln Gly Ile Pro Ala Gly Ser Ser Pro Glu Pro Ala Pro
            20                  25                  30
Asp Pro Pro Gly Pro His Phe Leu Arg Gln Glu Arg Ser Phe Glu Cys
        35                  40                  45
Arg Met Cys Gly Lys Ala Phe Lys Arg Ser Ser Thr Leu Ser Thr His
    50                  55                  60
Leu Leu Ile His Ser Asp Thr Arg Pro Tyr Pro Cys Gln Phe Cys Gly
65                  70                  75                  80
Lys Arg Phe His Gln Lys Ser Asp Met Lys Lys His Thr Tyr Ile His
                85                  90                  95
Thr Gly Glu Lys Pro His Lys Cys Gln Thr Gln Arg Glu Pro Thr Met
            100                 105                 110
Val Leu Ser Pro Ala Asp Lys Thr Asn Val Lys Ala Ala Trp Xaa *
            115                 120                 125     127


        <210> 897
        <211> 57
        <212>Amino acid
        <213> Homo sapiens
```

<400> 897
```
His Glu Gln Leu Thr Asn Asn Thr Ala Thr Ala Pro Ser Ala Thr Pro
1               5                   10                  15
Val Phe Gly Gln Val Ala Ala Ser Thr Ala Pro Ser Leu Phe Gly Gln
            20                  25                  30
Gln Thr Gly Ile Thr Ala Ser Thr Ala Val Ala Thr Pro Gln Val Ile
            35                  40                  45
Ser Ser Arg Phe Ile Asn Leu Asp Phe
        50                  55      57
```

<210> 898
<211> 163
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(163)
<223> X = any amino acid or stop code

<400> 898
```
Val Ser Val Phe Lys Asn Cys Pro Met Tyr Xaa Ile Cys Ile Phe Leu
1               5                   10                  15
Thr Lys Met Phe Cys Val Leu Ile Ile Xaa Asn Lys Phe Xaa Val His
            20                  25                  30
Lys Lys Pro Leu Gln Glu Val Glu Ile Ala Ala Ile Thr His Gly Ala
            35                  40                  45
Leu Gln Gly Leu Ala Tyr Leu His Ser His Thr Met Ile His Arg Asp
        50                  55                  60
Ile Lys Ala Gly Asn Ile Leu Leu Thr Glu Pro Gly Gln Val Lys Leu
65                  70                  75                  80
Ala Asp Phe Gly Ser Ala Ser Met Ala Ser Pro Ala Asn Ser Phe Val
            85                  90                  95
Gly Thr Pro Tyr Trp Met Ala Pro Glu Val Ile Leu Ala Met Asp Glu
            100                 105                 110
Gly Gln Tyr Asp Gly Lys Val Asp Val Trp Ser Leu Gly Ile Thr Cys
            115                 120                 125
Ile Glu Leu Ala Glu Arg Lys Pro Pro Leu Phe Asn Met Asn Ala Met
            130                 135                 140
Ser Ala Leu Tyr His Ile Ala Gln Asn Glu Ser Pro Thr Leu Gln Ser
145                 150                 155                 160
Asn Glu Trp
            163
```

<210> 899
<211> 352
<212> Amino acid
<213> Homo sapiens

<400> 899

```
Arg His Ala Arg Pro Gly Gly Gly Gly His Ser Asn Gln Arg Lys Met
 1               5                  10                  15
Ser Leu Glu Gln Glu Glu Glu Thr Gln Pro Gly Arg Leu Leu Gly Arg
            20                  25                  30
Arg Asp Ala Val Pro Ala Phe Ile Glu Pro Asn Val Arg Phe Trp Ile
        35                  40                  45
Thr Glu Arg Gln Ser Phe Ile Arg Arg Phe Leu Gln Trp Thr Glu Leu
    50                  55                  60
Leu Asp Pro Thr Asn Val Phe Ile Ser Val Glu Ser Ile Glu Asn Ser
65                  70                  75                  80
Arg Gln Leu Leu Cys Thr Asn Glu Asp Val Ser Ser Pro Ala Ser Ala
            85                  90                  95
Asp Gln Arg Ile Gln Glu Ala Trp Lys Arg Ser Leu Ala Thr Val His
            100                 105                 110
Pro Asp Ser Ser Asn Leu Ile Pro Lys Leu Phe Arg Pro Ala Ala Phe
        115                 120                 125
Leu Pro Phe Met Ala Pro Thr Val Phe Leu Ser Met Thr Pro Leu Lys
    130                 135                 140
Gly Ile Lys Ser Val Ile Leu Pro Gln Val Phe Leu Cys Ala Tyr Met
145                 150                 155                 160
Ala Ala Phe Asn Ser Ile Asn Gly Asn Arg Ser Tyr Thr Cys Lys Pro
            165                 170                 175
Leu Glu Arg Ser Leu Leu Met Ala Gly Ala Val Ala Ser Ser Thr Phe
        180                 185                 190
Leu Gly Val Ile Pro Gln Phe Val Gln Met Lys Tyr Gly Leu Thr Gly
        195                 200                 205
Pro Trp Ile Lys Arg Leu Leu Pro Val Ile Phe Leu Val Gln Ala Ser
    210                 215                 220
Gly Met Asn Val Tyr Met Ser Arg Ser Leu Glu Ser Ile Lys Gly Ile
225                 230                 235                 240
Ala Val Met Asp Lys Glu Gly Asn Val Leu Gly His Ser Arg Ile Ala
            245                 250                 255
Gly Thr Lys Ala Val Arg Glu Thr Leu Ala Ser Arg Ile Val Leu Phe
            260                 265                 270
Gly Thr Ser Ala Leu Ile Pro Glu Val Phe Thr Tyr Phe Phe Lys Arg
    275                 280                 285
Thr Gln Tyr Phe Arg Lys Asn Pro Gly Ser Leu Trp Ile Leu Lys Leu
    290                 295                 300
Ser Cys Thr Val Leu Ala Met Gly Leu Met Val Pro Phe Ser Phe Ser
305                 310                 315                 320
Ile Phe Pro Gln Ile Gly Gln Ile Gln Tyr Cys Ser Leu Glu Glu Lys
            325                 330                 335
Ile Gln Ser Pro Thr Glu Glu Thr Glu Ile Phe Tyr His Arg Gly Val
            340                 345                 350         352
```

```
<210> 900
<211> 186
<212>Amino acid
<213> Homo sapiens
```

```
<400> 900
His Ala Ser Gly Arg Leu Glu Val Phe Tyr Asn Gly Thr Trp Gly Ser
 1               5                  10                  15
Val Gly Arg Arg Asn Ile Thr Thr Ala Ala Gly Ile Val Cys Arg
            20                  25                  30
Gln Leu Gly Cys Gly Glu Asn Gly Val Val Ser Leu Ala Pro Leu Ser
        35                  40                  45
```

```
Lys Thr Gly Ser Gly Phe Met Trp Val Asp Asp Ile Gln Cys Pro Lys
  · 50              55              60
Thr His Ile Ser Ile Trp Gln Cys Leu Ser Ala Pro Trp Glu Arg Arg
 65              70              75              80
Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile Thr Cys Glu Asp Arg Ile
                85              90              95
Arg Val Arg Gly Gly Asp Thr Glu Cys Ser Gly Arg Val Glu Ile Trp
         100             105             110
His Ala Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Ala
         115             120             125
Glu Ala Glu Val Val Cys Gln Gln Leu Gly Cys Gly Ser Ala Leu Ala
     130 ·          135             140
Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly Thr Gly Thr Ile Trp Leu
145             150             155             160
Asp Asp Met Arg Cys Lys Gly Asn Glu Ser Phe Leu Trp Asp Cys His
             165             170             175
Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly
             180             185 186
```

```
<210> 901
<211> 365
<212>Amino acid
<213> Homo sapiens
```

```
<400> 901
Leu Gly Asp Phe Pro Gln Pro Gln Arg Gln Arg Arg Pro Gly Ala Ser
  1           5               10              15
Asp Leu Pro Pro His Leu Ala Gly Ala Arg Gln Trp Glu Val Arg Phe
             20              25              30
Phe Arg His Leu Pro Ala Arg Thr Leu Pro Pro Ser Leu Arg Met Pro
         35              40              45
Glu Gly Pro Glu Leu His Leu Ala Ser Gln Phe Val Asn Glu Ala Cys
     50              55              60
Arg Ala Leu Val Phe Gly Gly Cys Val Glu Lys Ser Ser Val Ser Arg
 65              70 ·            75              80
Asn Pro Glu Val Pro Phe Glu Ser Ser Ala Tyr Arg Ile Ser Ala Ser
                85              90              95
Ala Arg Gly Lys Glu Leu Arg Leu Ile Leu Ser Pro Leu Pro Gly Ala
         100             105             110
Gln Pro Gln Gln Glu Pro Leu Ala Leu Val Phe Arg Phe Gly Met Ser
     115             120             125
Gly Ser Phe Gln Leu Val Pro Arg Glu Glu Leu Pro Arg His Ala His
     130             135             140
Leu Arg Phe Tyr Thr Ala Pro Pro Gly Pro Arg Leu Ala Leu Cys Phe
145             150             155             160
Val Asp Ile Arg Arg Phe Gly Arg Trp Asp Leu Gly Gly Lys Trp Gln
             165             170             175
Pro Gly Arg Gly Pro Cys Val Leu Gln Glu Tyr Gln Gln Phe Arg Glu
             180             185             190
Asn Val Leu Arg Asn Leu Ala Asp Lys Ala Phe Asp Arg Pro Ile Cys
             195             200             205
Glu Ala Leu Leu Asp Gln Arg Phe Phe Asn Gly Ile Gly Asn Tyr Leu
     210 ·          215             220
Arg Ala Glu Ile Leu Tyr Arg Leu Lys Ile Pro Pro Phe Glu Lys Ala
225             230             235             240
Arg Ser Val Leu Glu Ala Leu Gln Gln His Arg Pro Ser Pro Glu Leu
             245             250             255
Thr Leu Ser Gln Lys Ile Arg Thr Lys Leu Gln Asn Pro Asp Leu Leu
             260             265             270
```

                                    495·

```
Glu Leu Cys His Ser Val Pro Lys Glu Val Val Gln Leu Gly Gly Arg
        275                 280                 285
Gly Tyr Gly Ser Glu Ser Gly Glu Glu Asp Phe Ala Ala Phe Arg Ala
        290                 295                 300
Trp Leu Arg Cys Tyr Gly Met Pro Gly Met Ser Ser Leu Gln Asp Arg
305                 310                 315                 320
His Gly Arg Thr Ile Trp Phe Gln Gly Asp Pro Gly Pro Leu Ala Pro
                325                 330                 335
Lys Gly Arg Lys Ser Arg Lys Lys Lys Ser Lys Ala Thr Gln Leu Ser
                340                 345                 350
Pro Glu Asp Arg Val Glu Asp Ala Leu Pro Pro Ser Lys
        355                 360                 365
```

```
<210> 902
<211> 110
<212> Amino acid
<213> Homo sapiens
```

```
<400> 902
Leu Thr Trp Ser Ala Cys Tyr Trp Arg Asp Ile Leu Arg Ile Gln Leu
1               5               10                  15
Trp Ile Ala Ala Asp Ile Leu Leu Arg Met Leu Glu Lys Ala Leu Leu
            20                  25                  30
Tyr Ser Glu His Gln Asn Ile Ser Asn Thr Gly Leu Ser Ser Gln Gly
        35                  40                  45
Leu Leu Ile Phe Ala Glu Leu Ile Pro Ala Ile Lys Arg Thr Leu Ala
        50                  55                  60
Arg Leu Leu Val Ile Ile Ala Ser Leu Asp Tyr Gly Ile Glu Lys Pro
65                  70                  75                  80
His Leu Gly Thr Gly Met His Arg Val Ile Gly Leu Met Leu Leu Tyr
                85                  90                  95
Leu Ile Phe Ala Asn Ala Glu Ser Val Ile Arg Val Ile Gly
                100                 105                 110
```

```
<210> 903
<211> 44
<212> Amino acid
<213> Homo sapiens
```

```
<400> 903
Phe Phe Phe Glu Met Glu Ser Arg Ser Ala Ala Gln Ala Gly Val Gln
1               5               10                  15
Trp Cys Asn Leu Gly Ser Leu Gln Ala Leu Pro Pro Arg Phe Thr Pro
            20                  25                  30
Phe Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr
        35                  40                  44
```

```
<210> 904
<211> 190
<212> Amino acid
<213> Homo sapiens
```

496

<400> 904
Tyr Glu Cys Glu Glu Leu Ala Lys Lys Leu Glu Asn Ser Gln Arg Asp
1   5   10   15
Gly Ile Ser Arg Asn Lys Leu Ala Leu Ala Glu Leu Tyr Glu Asp Glu
            20   25   30
Val Lys Cys Lys Ser Ser Lys Ser Asn Arg Pro Lys Ala Thr Val Phe
            35   40   45
Lys Ser Pro Arg Thr Pro Pro Gln Arg Phe Tyr Ser Ser Glu His Glu
    50   55   60
Tyr Ser Gly Leu Asn Ile Val Arg Pro Ser Thr Gly Lys Ile Val Asn
65   70   75   80
Glu Leu Phe Lys Glu Ala Arg Glu His Gly Ala Val Pro Leu Asn Glu
            85   90   95
Ala Thr Arg Ala Ser Gly Asp Asp Lys Ser Lys Ser Phe Thr Gly Gly
            100   105   110
Gly Tyr Arg Leu Gly Ser Ser Phe Cys Lys Arg Ser Glu Tyr Ile Tyr
            115   120   125
Gly Glu Asn Gln Leu Gln Asp Val Gln Ile Leu Leu Lys Leu Trp Ser
            130   135   140
Asn Gly Phe Ser Leu Asp Asp Gly Glu Leu Arg Pro Tyr Asn Glu Pro
145   150   155   160
Thr Asn Ala Gln Phe Leu Glu Ser Val Lys Arg Gly Val Thr Leu Ile
            165   170   175
Ala Cys Met Pro Glu Ile Gln Gln Leu Met Leu Glu Ile Phe
            180   185   190

<210> 905
<211> 414
<212>Amino acid
<213> Homo sapiens

<400> 905
Trp Pro Cys Gly Ala Ala Pro Gly Leu Thr His Ala Ser Glu Arg Met
1   5   10   15
Phe Thr Leu Thr Thr Met Ile Gln Ala Leu Ala Pro Val Met Gly Trp
            20   25   30
Asp Arg Lys Pro Leu Lys Met Phe Ser Ser Glu Glu Met Arg Gly His
            35   40   45
Leu His His His His Lys Cys Leu Thr Lys Ile Leu Lys Val Glu Gly
    50   55   60
Gln Val Pro Asp Leu Pro Ser Cys Leu Pro Leu Thr Asp Asn Thr Arg
65   70   75   80
Met Leu Ala Ser Ile Leu Ile Asn Met Leu Tyr Asp Asp Leu Arg Cys
            85   90   95
Asp Pro Glu Arg Asp His Phe Arg Lys Ile Cys Glu Glu Tyr Ile Thr
            100   105   110
Gly Lys Phe Asp Pro Gln Asp Met Asp Lys Asn Leu Asn Ala Ile Gln
            115   120   125
Thr Val Ser Gly Ile Leu Gln Gly Pro Phe Asp Leu Gly Asn Gln Leu
            130   135   140
Leu Gly Leu Lys Gly Val Met Glu Met Met Val Ala Leu Cys Gly Ser
145   150   155   160
Glu Arg Glu Thr Asp Gln Leu Val Ala Val Glu Ala Leu Ile His Ala
            165   170   175
Ser Thr Lys Leu Ser Arg Ala Thr Phe Ile Ile Thr Asn Gly Val Ser
            180   185   190

```
Leu Leu Lys Gln Ile Tyr Lys Thr Thr Lys Asn Glu Lys Ile Lys Ile
        195             200                 205
Arg Thr Leu Val Gly Leu Cys Lys Leu Gly Ser Ala Gly Gly Thr Asp
    210             215                 220
Tyr Gly Leu Arg Gln Phe Ala Glu Gly Ser Thr Glu Lys Leu Ala Lys
225             230                 235                 240
Gln Cys Arg Lys Trp Leu Cys Asn Met Ser Ile Asp Thr Arg Thr Arg
                245                 250                 255
Arg Trp Ala Val Glu Gly Leu Ala Tyr Leu Thr Leu Asp Ala Asp Val
            260                 265                 270
Lys Asp Asp Phe Val Gln Asp Val Pro Ala Leu Gln Ala Met Phe Glu
        275                 280                 285
Leu Ala Lys Thr Ser Asp Lys Thr Ile Leu Tyr Ser Val Ala Thr Thr
    290                 295                 300
Leu Val Asn Cys Thr Asn Ser Tyr Asp Val Lys Glu Val Ile Pro Glu
305             310                 315                 320
Leu Val Gln Leu Ala Lys Phe Ser Lys Gln His Val Pro Glu Glu His
            325                 330                 335
Pro Lys Asp Lys Lys Asp Phe Ile Asp Met Arg Val Lys Arg Leu Leu
        340                 345                 350
Lys Ala Gly Val Ile Ser Ala Leu Ala Cys Met Val Lys Ala Asp Ser
    355                 360                 365
Ala Ile Leu Thr Asp Gln Thr Lys Glu Leu Leu Ala Arg Val Phe Leu
    370                 375                 380
Ala Leu Cys Asp Asn Pro Lys Asp Arg Gly Thr Ile Val Ala Gln Gly
385                 390                 395                 400
Gly Gly Lys Ala Leu Ile Pro Leu Ala Leu Glu Gly Thr Asp
                405                 410                 414
```

```
<210> 906
<211> 296
<212> Amino acid
<213> Homo sapiens
```

```
<400> 906
Val Asp Ser Val Gly Gly Gly Ser Glu Ser Arg Ser Leu Asp Ser Pro
1                   5                   10                  15
Thr Ser Ser Pro Gly Ala Gly Thr Arg Gln Leu Val Lys Ala Ser Ser
            20                  25                  30
Thr Gly Thr Glu Ser Ser Asp Asp Phe Glu Glu Arg Asp Pro Asp Leu
        35                  40                  45
Gly Asp Gly Leu Glu Asn Gly Leu Gly Ser Pro Phe Gly Lys Trp Thr
    50                  55                  60
Leu Ser Ser Ala Ala Gln Thr His Gln Leu Arg Arg Leu Arg Gly Pro
65                  70                  75                  80
Ala Lys Cys Arg Glu Cys Glu Ala Phe Met Val Ser Gly Thr Glu Cys
                85                  90                  95
Glu Glu Cys Phe Leu Thr Cys His Lys Arg Cys Leu Glu Thr Leu Leu
            100                 105                 110
Ile Leu Cys Gly His Arg Arg Leu Pro Ala Arg Thr Pro Leu Phe Gly
    115                 120                 125
Val Asp Phe Leu Gln Leu Pro Arg Asp Phe Pro Glu Glu Val Pro Phe
    130                 135                 140
Val Val Thr Lys Cys Thr Ala Glu Ile Glu His Arg Ala Leu Asp Val
145                 150                 155                 160
Gln Gly Ile Tyr Arg Val Ser Gly Ser Arg Val Arg Val Glu Arg Leu
            165                 170                 175
Cys Gln Ala Phe Glu Asn Gly Arg Ala Leu Val Glu Leu Ser Gly Asn
            180                 185                 190
```

```
Ser Pro His Asp Val Ser Ser Val Leu Lys Arg Phe Leu Gln Glu Leu
        195                 200                 205
Thr Glu Pro Val Ile Pro Phe His Leu Tyr Asp Ala Phe Ile Ser Leu
    210                 215                 220
Ala Lys Thr Leu His Ala Asp Pro Gly Asp Asp Pro Gly Thr Pro Ser
225                 230                 235                 240
Pro Ser Pro Glu Val Ile Arg Ser Leu Lys Thr Leu Leu Val Gln Leu
            245                 250                 255
Pro Asp Ser Asn Tyr Asn Thr Leu Arg His Leu Val Ala His Leu Phe
        260                 265                 270
Arg Val Ala Ala Arg Phe Met Glu Asn Lys Met Ser Ala Asn Asn Leu
    275                 280                 285
Gly Ile Val Phe Gly Pro Thr Leu
    290                 295 296
```

```
<210> 907
<211> 131
<212> Amino acid
<213> Homo sapiens
```

```
<400> 907
Gly Leu His Val Ile Ser Leu His Ser Ala Asp Gly Arg His Trp Glu
1                 5                 10                  15
Asp Pro Leu Ser Glu Leu Asp Ser Glu Arg Val Ser Ala Phe Leu Val
            20                  25                  30
Thr Glu Thr Leu Val Phe Tyr Leu Phe Cys Leu Leu Ala Asp Glu Thr
        35                  40                  45
Val Val Pro Pro Asp Val Pro Ser Tyr Leu Ser Ser Gln Gly Thr Leu
    50                  55                  60
Ser Asp Arg Gln Glu Thr Val Val Arg Thr Glu Gly Gly Pro Gln Ala
65                  70                  75                  80
Asn Gly His Ile Glu Ser Asn Gly Lys Ala Ser Val Thr Val Lys Gln
                85                  90                  95
Ser Ser Ala Val Thr Val Ser Leu Gly Ala Gly Gly Gly Leu Gln Val
            100                 105                 110
Phe Thr Gly Gln Val Pro Gly Ile Arg Trp Gly Lys Leu Gly Glu Ala
        115                 120                 125
His Ala Ser
130 131
```

```
<210> 908
<211> 124
<212> Amino acid
<213> Homo sapiens
```

```
<400> 908
Lys Ile Lys His Arg Pro Glu Glu Glu Pro Arg Trp Ala Ala Ala Gly
1                 5                 10                  15
Ala Gln Ser Ala Gly Pro Gly Ala Ala Glu Val Ala Pro Pro Arg Pro
            20                  25                  30
Gly Thr Val Ala Pro Gly Ala Asn Gly Met Thr Asp Ser Ala Thr Ala
        35                  40                  45
Asn Gly Asp Asp Arg Asp Pro Glu Ile Glu Leu Phe Val Lys Ala Gly
    50                  55                  60
```

```
Ile Asp Gly Glu Ser Ile Gly Asn Cys Pro Phe Ser Gln Arg Leu Phe
65              70              75                      80
Met Ile Leu Trp Leu Lys Gly Val Val Phe Asn Val Thr Thr Val Asp
            85              90                      95
Leu Lys Arg Lys Pro Ala Asp Leu Arg Asn Leu Ala Pro Gly Thr His
            100             105             110
Pro Pro Phe Leu Ala Phe Asn Trp Tyr Val Lys Thr
            115             120         124
```

```
<210> 909
<211> 111
<212>Amino acid
<213> Homo sapiens
```

```
<400> 909
Leu Gly Phe Ser Asp Gly Gln Glu Ala Arg Pro Glu Glu Ile Gly Trp
1           5               10                  15
Leu Asn Gly Tyr Asn Glu Thr Thr Gly Glu Arg Gly Asp Phe Pro Gly
            20              25              30
Thr Tyr Val Glu Tyr Ile Gly Arg Lys Lys Ile Ser Pro Pro Thr Pro
        35              40              45
Lys Pro Arg Pro Pro Arg Pro Leu Pro Val Ala Pro Gly Ser Ser Lys
    50              55              60
Thr Glu Ala Asp Val Glu Gln Gln Val Leu Tyr Lys Tyr Arg Lys Lys
65              70                      75                      80
Pro Ser Ser Ser His Arg Pro Gln Thr Pro His Asn Gly Lys Ser Lys
            85              90                      95
Asn Phe Leu His Lys Gln Gly Leu Lys Lys Lys Lys Ala Ser Leu
            100             105             110 111
```

```
<210> 910
<211> 298
<212>Amino acid
<213> Homo sapiens
```

```
<400> 910
Arg Thr Arg Gly Val Met Glu Leu Ala Leu Arg Arg Ser Pro Val Pro
1           5               10                  15
Arg Trp Leu Leu Leu Leu Pro Leu Leu Leu Gly Leu Asn Ala Gly Ala
            20              25              30
Val Ile Asp Trp Pro Thr Glu Glu Gly Lys Glu Val Trp Asp Tyr Val
            35              40              45
Thr Val Arg Lys Asp Ala Tyr Met Phe Trp Trp Leu Tyr Tyr Ala Thr
    50              55              60
Asn Ser Cys Lys Asn Phe Ser Glu Leu Pro Leu Val Met Trp Leu Gln
65              70                      75                      80
Gly Gly Pro Gly Gly Ser Ser Thr Gly Phe Gly Asn Phe Glu Glu Ile
            85              90                      95
Gly Pro Leu Asp Ser Asp Leu Lys Pro Arg Lys Thr Thr Trp Leu Gln
            100             105             110
Ala Ala Ser Leu Leu Phe Val Asp Asn Pro Val Gly Thr Gly Phe Ser
            115             120             125
Tyr Val Asn Gly Ser Gly Ala Tyr Ala Lys Asp Leu Ala Met Val Ala
            130             135             140
```

500

```
Ser Asp Met Met Gly Leu Leu Lys Thr Phe Phe Ser Cys His Lys Glu
145                 150             155                 160
Phe Gln Thr Val Pro Phe Tyr Ile Phe Ser Glu Ser Tyr Gly Gly Lys
                165             170                 175
Met Ala Ala Gly Ile Gly Leu Glu Leu Tyr Lys Ala Ile Gln Arg Gly
            180             185                 190
Thr Ile Lys Cys Asn Phe Ala Gly Val Ala Leu Gly Asp Ser Trp Ile
        195             200                 205
Ser Pro Val Asp Ser Val Leu Ser Trp Gly Pro Tyr Leu Tyr Ser Met
    210             215                 220
Ser Leu Leu Glu Asp Lys Gly Leu Ala Glu Val Ser Lys Val Ala Glu
225                 230             235                 240
Gln Val Leu Asn Ala Val Asn Lys Gly Leu Tyr Arg Glu Ala Thr Glu
                245             250                 255
Leu Trp Gly Lys Ala Glu Met Ile Ile Glu Gln Val Lys Arg Gly Asn
        260             265                 270
Thr Gln Arg Arg Ala Cys Leu Ala Phe Ser Gly Gly Tyr Arg Ala His
        275             280                 285
Gly Trp Cys Cys Gln Thr Trp Ser Leu His
    290             295         298
```

```
<210> 911
<211> 213
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(213)
<223> X = any amino acid or stop code
```

```
<400> 911
Pro Gly Trp Ser Arg Ser Pro Asp Leu Val Ile Arg Leu Pro Arg Pro
1               5               10                  15
Pro Lys Val Leu Gly Leu Gln Tyr Tyr His Phe Phe Phe Phe Leu Arg
            20              25                  30
Trp Ser Leu Asp Ser Val Ala Gln Ala Glu Val Gln Trp His Asp Leu
        35              40                  45
Arg Ser Leu Gln Ala Pro Pro Pro Gly Phe Thr Pro Phe Ser Cys Leu
    50              55              60
Ser Leu Pro Gly Ser Trp Asp Tyr Arg Cys Pro Pro Arg Pro Ala
65              70                  75                  80
Asn Phe Leu Tyr Phe Xaa Xaa Arg Arg Gly Phe Thr Val Leu Ala Arg
                85              90                  95
Met Val Ser Ile Ser Xaa Pro Arg Asp Pro Pro Ala Ser Ala Ser Gln
            100             105                 110
Ser Ala Gly Ile Thr Val Leu Ser Leu Phe Phe Phe Phe Glu Met Glu
        115             120                 125
Ser Cys Ser Val Ala Gln Ala Gly Val Gln Trp Arg Tyr Leu Gly Ser
    130             135                 140
Leu Gln Ala Leu Pro Pro Gly Phe Thr Pro Phe Ser Cys Leu Ser Leu
145             150                 155                 160
Pro Ser Ser Trp Asp Tyr Arg Arg Pro Pro Pro Arg Pro Ala Asn Phe
            165             170                 175
Phe Val Phe Leu Val Glu Thr Gly Val Ser Pro Cys Xaa Pro Gly Trp
            180             185                 190
Ser Arg Ser Pro Asp Leu Val Ile Arg Leu Pro Gln Pro Pro Lys Val
    195             200                 205
Leu Gly Leu Gln Val
```

501

210   213

<210> 912
<211> 583
<212>Amino acid
<213> Homo sapiens

<400> 912
```
Pro Ser Met Lys Thr Gly Glu Leu Glu Lys Glu Thr Ala Pro Leu Arg
 1           5                  10                  15
Lys Asp Ala Asp Ser Ser Ile Ser Val Leu Glu Ile His Ser Gln Lys
            20                  25                  30
Ala Gln Ile Glu Glu Pro Asp Pro Pro Glu Met Glu Thr Ser Leu Asp
            35                  40                  45
Ser Ser Glu Met Ala Lys Asp Leu Ser Ser Lys Thr Ala Leu Ser Ser
    50                  55                  60
Thr Glu Ser Cys Thr Met Lys Gly Glu Glu Lys Ser Pro Lys Thr Lys
65                  70                  75                  80
Lys Asp Lys Arg Pro Pro Ile Leu Glu Cys Leu Glu Lys Leu Glu Lys
            85                  90                  95
Ser Lys Lys Thr Phe Leu Asp Lys Asp Ala Gln Arg Leu Ser Pro Ile
            100                 105                 110
Pro Glu Glu Val Pro Lys Ser Thr Leu Glu Ser Glu Lys Pro Gly Ser
            115                 120                 125
Pro Glu Ala Ala Glu Thr Ser Pro Pro Ser Asn Ile Ile Asp His Cys
    130                 135                 140
Glu Lys Leu Ala Ser Glu Lys Glu Val Val Glu Cys Gln Ser Thr Ser
145                 150                 155                 160
Thr Val Gly Gly Gln Ser Val Lys Lys Val Asp Leu Glu Thr Leu Lys
                165                 170                 175
Glu Asp Ser Glu Phe Thr Lys Val Glu Met Asp Asn Leu Asp Asn Ala
            180                 185                 190
Gln Thr Ser Gly Ile Glu Glu Pro Ser Glu Thr Lys Gly Ser Met Gln
    195                 200                 205
Lys Ser Lys Phe Lys Tyr Lys Leu Val Pro Glu Glu Glu Thr Thr Ala
    210                 215                 220
Ser Glu Asn Thr Glu Ile Thr Ser Glu Arg Gln Lys Glu Gly Ile Lys
225                 230                 235                 240
Leu Thr Ile Arg Ile Ser Ser Arg Lys Lys Lys Pro Asp Ser Pro Pro
                245                 250                 255
Lys Val Leu Glu Pro Glu Asn Lys Gln Glu Lys Thr Glu Lys Glu Glu
            260                 265                 270
Glu Lys Thr Asn Val Gly Arg Thr Leu Arg Arg Ser Pro Arg Ile Ser
    275                 280                 285
Arg Pro Thr Ala Lys Val Ala Glu Ile Arg Asp Gln Lys Ala Asp Lys
    290                 295                 300
Lys Arg Gly Glu Gly Glu Asp Glu Val Glu Glu Glu Ser Thr Ala Leu
305                 310                 315                 320
Gln Lys Thr Asp Lys Lys Glu Ile Leu Lys Lys Ser Glu Lys Asp Thr
            325                 330                 335
Asn Ser Lys Val Ser Lys Val Lys Pro Lys Gly Lys Val Arg Trp Thr
            340                 345                 350
Gly Ser Arg Thr Arg Gly Arg Trp Lys Tyr Ser Ser Asn Asp Glu Ser
    355                 360                 365
Glu Gly Ser Gly Ser Glu Lys Ser Ser Ala Ala Ser Glu Glu Glu Glu
    370                 375                 380
Glu Lys Glu Ser Glu Glu Ala Ile Leu Ala Asp Asp Asp Glu Pro Cys
385                 390                 395                 400
Lys Lys Cys Gly Leu Pro Asn His Pro Glu Leu Ile Leu Leu Cys Asp
```

```
                        405                    410                    415
Ser Cys Asp Ser Gly Tyr His Thr Ala Leu Pro Phe Ala Pro Pro Leu
                420                    425                    430
Met Ile His Pro Gln Met Gly Gly Trp Phe Cys Pro Thr Phe Cys Pro
            435                    440                    445
Thr Leu Asn Leu Leu Leu Leu Glu Lys Leu Glu Asp Gln Phe Gln Asp
        450                    455                    460
Leu Asp Val Ala Leu Lys Lys Glu Arg Ala Leu Pro Glu Arg Arg Lys
465                    470                    475                    480
Glu Arg Leu Val Tyr Val Gly Ile Ser Ile Glu Asn Ile Ile Pro Pro
                485                    490                    495
Gln Glu Pro Asp Phe Ser Glu Asp Gln Glu Glu Lys Lys Lys Asp Ser
            500                    505                    510
Lys Lys Ser Lys Ala Asn Leu Leu Glu Arg Arg Ser Thr Arg Thr Arg
        515                    520                    525
Lys Cys Ile Ser Tyr Arg Phe Asp Glu Phe Asp Glu Ala Ile Asp Glu
        530                    535                    540
Ala Ile Glu Asp Asp Ile Lys Glu Ala Asp Gly Gly Gly Val Gly Arg
545                    550                    555                    560
Gly Lys Asp Ile Ser Thr Ile Thr Gly His Arg Gly Lys Asp Ile Ser
                565                    570                    575
Thr Ile Leu Asp Glu Glu Arg
                580                    583
```

```
        <210> 913
        <211> 178
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 913
Lys Arg Arg Gly Ser Phe Lys Met Ala Glu Leu Asp Gln Leu Pro Asp
1                    5                    10                    15
Glu Ser Ser Ser Ala Lys Ala Leu Val Ser Leu Lys Glu Gly Ser Leu
                20                    25                    30
Ser Asn Thr Trp Asn Glu Lys Tyr Ser Ser Leu Gln Lys Thr Pro Val
            35                    40                    45
Trp Lys Gly Arg Asn Thr Ser Ser Ala Val Glu Met Pro Phe Arg Asn
    50                    55                    60
Ser Lys Arg Ser Arg Leu Phe Ser Asp Glu Asp Asp Arg Gln Ile Asn
65                    70                    75                    80
Thr Arg Ser Pro Lys Arg Asn Gln Arg Val Ala Met Val Pro Gln Lys
                85                    90                    95
Phe Thr Ala Thr Met Ser Thr Pro Asp Lys Lys Ala Ser Gln Lys Ile
            100                    105                    110
Gly Phe Arg Leu Arg Asn Leu Leu Lys Leu Pro Lys Ala His Lys Trp
        115                    120                    125
Cys Ile Tyr Glu Trp Phe Tyr Ser Asn Ile Asp Lys Pro Leu Phe Glu
        130                    135                    140
Gly Asp Asn Asp Phe Cys Val Cys Leu Lys Glu Ser Phe Pro Asn Leu
145                    150                    155                    160
Lys Thr Arg Lys Leu Thr Arg Val Glu Trp Gly Lys Ile Arg Arg Leu
                165                    170                    175
Met Gly
178
```

```
        <210> 914
        <211> 158
        <212>Amino acid
```

503

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(158)
<223> X = any amino acid or stop code

<400> 914

```
Met Pro Glu Tyr Leu Arg Lys Arg Phe Gly Gly Ile Arg Ile Pro Ile
1               5                   10                  15
Ile Leu Ala Val Leu Tyr Leu Phe Ile Tyr Ile Phe Thr Lys Ile Ser
            20                  25                  30
Val Asp Met Tyr Ala Gly Ala Ile Phe Ile Gln Gln Ser Leu His Leu
        35                  40                  45
Asp Leu Tyr Leu Ala Ile Val Gly Leu Leu Ala Ile Thr Ala Val Tyr
        50                  55                  60
Thr Val Ala Gly Gly Leu Ala Ala Val Ile Tyr Thr Asp Ala Leu Gln
65                  70                  75                  80
Thr Leu Ile Met Leu Ile Gly Ala Leu Thr Leu Met Gly Tyr Ser Phe
                85                  90                  95
Ala Ala Val Gly Gly Met Glu Gly Leu Lys Glu Lys Tyr Phe Leu Ala
            100                 105                 110
Leu Ala Ser Asn Arg Ser Glu Asn Ser Ser Cys Gly Leu Pro Arg Glu
            115                 120                 125
Asp Ala Phe His Ile Phe Arg Asp Pro Leu Thr Ser Asp Leu Pro Trp
130                 135                 140
Pro Gly Val Leu Phe Gly Met Ser Ile Pro Ser Leu Xaa   *
145                 150                 155     157
```

<210> 915
<211> 108
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(108)
<223> X = any amino acid or stop code

<400> 915

```
Xaa Ser Ala Ser Ala Thr Ser Leu Thr Leu Ser His Cys Val Asp Val
1               5                   10                  15
Val Lys Gly Leu Leu Asp Phe Lys Lys Arg Arg Gly His Ser Ile Gly
            20                  25                  30
Gly Ala Pro Glu Gln Arg Tyr Gln Ile Ile Pro Val Met Cys Cys Ser
        35                  40                  45
Leu Leu Ala Thr Gly Gly Ala Asp Arg Leu Ile His Leu Trp Asn Val
    50                  55                  60
Val Gly Ser Arg Leu Glu Ala Asn Gln Thr Leu Glu Gly Ala Gly Gly
65                  70                  75                  80
Ser Ile Thr Ser Val Asp Phe Asp Pro Ser Gly Tyr Gln Val Leu Ala
                85                  90                  95
Ala Thr Tyr Asn Gln Val Ala Gln Phe Trp Lys   *
            100                 105     107
```

```
<210> 916
<211> 45
<212>Amino acid
<213> Homo sapiens
```

```
<400> 916
Gln Lys Arg Phe Pro Ser Asn Cys Gly Arg Asp Gly Lys Leu Phe Leu
1               5                   10                  15
Trp Gly Gln Ala Leu His Ile Ile Ala Lys Leu Leu Gly Lys Trp Arg
            20                  25                  30
Arg Leu Gly Met Val Phe Phe Ser Leu Leu Leu Ser Tyr
            35                  40                  45
```

```
<210> 917
<211> 180
<212>Amino acid
<213> Homo sapiens
```

```
<400> 917
Val His Val Cys Ser Ser Lys Met Gly Ala Leu Ser Thr Glu Arg Leu
1               5                   10                  15
Gln Tyr Tyr Thr Gln Glu Leu Gly Val Arg Glu Arg Ser Gly His Ser
            20                  25                  30
Val Ser Leu Ile Asp Leu Trp Gly Leu Leu Val Glu Tyr Leu Leu Tyr
            35                  40                  45
Gln Glu Glu Asn Pro Ala Lys Leu Ser Asp Gln Gln Glu Ala Val Arg
        50                  55                  60
Gln Gly Gln Asn Pro Tyr Pro Ile Tyr Thr Ser Val Asn Val Arg Thr
65                  70                  75                  80
Asn Leu Ser Gly Glu Asp Phe Ala Glu Trp Cys Glu Phe Thr Pro Tyr
            85                  90                  95
Glu Val Gly Phe Pro Lys Tyr Gly Ala Tyr Val Pro Thr Glu Leu Phe
            100                 105                 110
Gly Ser Glu Leu Phe Met Gly Arg Leu Leu Gln Leu Gln Pro Glu Pro
        115                 120                 125
Arg Ile Cys Tyr Leu Gln Gly Met Trp Gly Ser Ala Phe Ala Thr Ser
    130                 135                 140
Leu Asp Glu Ile Phe Leu Lys Thr Ala Gly Ser Gly Leu Ser Phe Leu
145                 150                 155                 160
Glu Trp Tyr Arg Gly Ser Val Asn Ile Thr Asp Asp Cys Gln Lys Pro
            165                 170                 175
Gln Leu His Asn
            180
```

```
<210> 918
<211> 281
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 918
Glu Phe Leu Gly Arg Pro Thr Arg Pro Ala Lys Asp Glu Gly Asn Asp
 1               5                  10                      15
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
            20                  25                  30
Glu Gly Lys Asp Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp
        35                  40                  45
Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
    50                  55                  60
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
65                  70                  75                      80
Glu Gly Lys Asp Glu Gly Asn Asp Glu Gly Lys Asp Glu Gly Lys Asp
            85                  90                  95
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
            100                 105                 110
Glu Arg Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Arg Lys Asp
    115                 120                 125
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
    130                 135                 140
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Asn Asp
145                 150                 155                 160
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
            165                 170                 175
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Asn Asp Glu Gly Asn Asp
        180                 185                 190
Glu Gly Asn Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Arg Asn Asp
    195                 200                 205
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
    210                 215                 220
Glu Arg Asn Asp Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp
225                 230                 235                 240
Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp Glu Gly Lys Asp
            245                 250                 255
Glu Gly Asn Asp Glu Gly Lys Asp Glu Arg Lys Asp Glu Gly Lys Asp
    260                 265                 270
Glu Gly Lys Asp Glu Gly Lys Asp Lys
    275                 280 281


        <210> 919
        <211> 147
        <212>Amino acid
        <213> Homo sapiens




        <400> 919
Pro Ser Leu Arg Pro Ala Trp His Glu Gly Glu Asp Phe Ser Tyr Gly
 1               5                  10                      15
Leu Gln Pro Tyr Cys Gly Tyr Ser Phe Gln Val Val Gly Glu Met Ile
            20                  25                  30
Arg Asn Arg Glu Val Leu Pro Cys Pro Asp Asp Cys Pro Ala Trp Ala
        35                  40                  45
Tyr Ala Leu Met Ile Glu Gly Trp Asn Glu Phe Pro Ser Arg Arg Ala
    50                  55                  60
Arg Phe Lys Asp Ile His Ser Arg Leu Arg Ala Trp Gly Asn Leu Ser
65                  70                  75                      80
Asn Tyr Asn Ser Ser Glu Gln Thr Ser Gly Gly Arg Asn Thr Thr Gln
            85                  90                  95
Thr Ser Ser Leu Ser Thr Ser Pro Leu Cys Asn Val Ser Asn Ala Pro
            100                 105                 110
Tyr Val Gly Pro Lys Gln Lys Val Pro Pro Phe Pro Gln Thr Gln Val
```

```
            115                      120                      125
Ile Pro Met Lys Gly Gln Ile Arg Pro Met Val Pro Pro Pro Gln Leu
        130                      135                      140
Tyr Val Pro
145         147
```

```
        <210> 920
        <211> 150
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 920
Arg Asn Ser Gly Arg His Pro Arg Val Arg Trp Ile Leu Glu Glu Arg
1                   5                   10                      15
Lys Arg Val Met Gln Glu Ala Cys Ala Lys Tyr Arg Ala Ser Ser Ser
            20                      25                      30
Arg Arg Ala Val Thr Pro Arg His Val Ser Arg Ile Phe Val Glu Asp
        35                      40                      45
Arg His Arg Val Leu Tyr Cys Glu Val Pro Lys Ala Gly Cys Ser Asn
    50                      55                      60
Trp Lys Arg Val Leu Met Val Leu Ala Gly Leu Ala Ser Ser Thr Ala
65                      70                      75                      80
Asp Ile Gln His Asn Thr Val His Tyr Gly Ser Ala Leu Lys Arg Leu
                85                      90                      95
Asp Thr Phe Asp Arg Gln Gly Ile Leu His Arg Leu Ser Thr Tyr Thr
            100                     105                     110
Lys Met Leu Phe Val Arg Glu Pro Phe Glu Arg Leu Val Ser Ala Phe
            115                     120                     125
Arg Asp Lys Phe Glu His Pro Asn Ser Tyr Tyr His Pro Val Phe Cys
        130                     135                     140
Met Ala Ile Leu Ala Arg
145                     150
```

```
        <210> 921
        <211> 125
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 921
Ile Met Tyr Ser Ile Ser Pro Ala Asn Ser Glu Glu Gly Gln Glu Leu
1                   5                   10                      15
Tyr Val Cys Thr Val Lys Asp Asp Val Asn Leu Asp Thr Val Leu Leu
            20                      25                      30
Leu Pro Phe Leu Lys Glu Ile Ala Val Ser Gln Leu Asp Gln Leu Ser
        35                      40                      45
Pro Glu Glu Gln Leu Leu Val Lys Cys Ala Ala Ile Ile Gly His Ser
    50                      55                      60
Phe His Ile Asp Leu Leu Gln His Leu Leu Pro Gly Trp Asp Lys Asn
65                      70                      75                      80
Lys Leu Leu Gln Val Leu Arg Ala Leu Val Asp Ile His Val Leu Cys
                85                      90                      95
Trp Ser Asp Lys Ser Gln Glu Leu Pro Ala Glu Pro Ile Leu Met Pro
            100                     105                     110
Ser Ser Ile Asp Ile Ile Asp Gly Thr Lys Glu Lys Lys
```

115   120   125

```
     <210> 922
     <211> 111
     <212>Amino acid
     <213> Homo sapiens



     <400> 922
Gly Pro His Val Val Leu Val Leu Arg Arg Cys Phe Leu Leu Ser Tyr
 1               5                  10                  15
Phe Lys Gly Val Glu Lys Ala Lys Ala Met Pro Ser Pro Arg Ile Leu
         20                  25                  30
Lys Thr His Leu Ser Thr Gln Leu Leu Pro Pro Ser Phe Trp Glu Asn
         35                  40                  45
Asn Cys Lys Val Arg Tyr Gln Gln Leu Pro Val Thr Glu Gly Lys Val
     50                  55                  60
Ser Gln Pro Lys Arg Val Leu Gln Thr Pro Thr Gln Ser Ile Arg Asp
 65                  70                  75                  80
His Leu Cys Leu Ser Thr Val Ser Asp Ala Tyr Gln Gln Arg Glu Asn
                 85                  90                  95
Ile Lys Phe Tyr Ile Gln Gln Asp Ile His Leu Asn Ser Phe Lys
                100                 105                 110 111


     <210> 923
     <211> 69
     <212>Amino acid
     <213> Homo sapiens



     <400> 923
Phe Tyr Tyr Ile Cys Arg Leu Ser Lys Glu Asp Lys Ala Phe Leu Trp
 1               5                  10                  15
Glu Lys Arg Tyr Tyr Cys Phe Lys His Pro Asn Cys Leu Pro Lys Ile
         20                  25                  30
Leu Ala Ser Ala Pro Asn Trp Lys Trp Val Asn Leu Ala Lys Thr Tyr
         35                  40                  45
Ser Leu Leu His Gln Trp Pro Ala Leu Tyr Pro Leu Ile Ala Leu Glu
     50                  55                  60
Leu Leu Asp Ser Lys
 65              69


     <210> 924
     <211> 120
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(120)
     <223> X = any amino acid or stop code
```

```
        <400> 924
Lys Met Met Ile Xaa Gly Leu Phe Glu Ile Gln Gln Cys Pro Ile Gly
1               5                   10                  15
Lys His Cys Asn Phe Leu Gln Val Leu Arg Asn Pro Asn Arg Asp Leu
            20                  25                  30
Trp Leu Val Ser Ser Phe Gly Lys Ser Ser Lys Gly Arg Glu Arg Met
        35                  40                  45
Gly His His Asp Glu Tyr Tyr Arg Leu Arg Gly Arg His Asn Pro Ser
    50                  55                  60
Pro Asp His Ser Tyr Lys Arg Asn Gly Glu Ser Glu Arg Lys Arg Lys
65                  70                  75                  80
Lys Ser His Xaa His Met Ser Lys Ser Gln Glu Arg His Asn Ser Pro
                85                  90                  95
Ser Arg Gly Arg Asn Ser Asp Arg Ser Gly Gly Arg Cys Ser Arg Ser
            100                 105                 110
Asp Asn Gly Arg Ser Arg Tyr Arg
            115                 120


        <210> 925
        <211> 108
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(108)
        <223> X = any amino acid or stop code




        <400> 925
Pro Leu Ser Leu Phe Ala Arg Val Ala Gly Ser Arg Val Glu Met Pro
1               5                   10                  15
Glu Pro Pro Gly Leu Gly Asp Glu Gly Arg Pro Leu Leu His Pro Gly
            20                  25                  30
Arg Arg Glu Ala Val Gly Ser Trp Val Ser Ala Phe Ala Gly Asp Ser
        35                  40                  45
Thr Pro Cys Gly Pro Gly Asp Leu Ser Val Pro Arg Arg Glu Pro Phe
    50                  55                  60
Arg Leu Thr Ala Leu Xaa Pro His Arg Ser Pro Val Val Arg Thr Ser
65                  70                  75                  80
Leu Ile Gly Leu Leu Leu Gly Phe Ser Val Lys Glu Glu Leu Arg Gly
                85                  90                  95
Val Gly Trp Ala Ala Arg Thr Pro Leu Gly Ile Arg
            100                 105         108


        <210> 926
        <211> 305
        <212>Amino acid
        <213> Homo sapiens




        <400> 926
Phe Asp Lys Arg Gln His Glu Ala Arg Ile Gln Gln Met Glu Asn Glu
1               5                   10                  15
Ile His Tyr Leu Gln Glu Asn Leu Lys Ser Met Glu Glu Ile Gln Gly
```

```
                    20                    25                    30
Leu Thr Asp Leu Gln Leu Gln Glu Ala Asp Glu Glu Lys Glu Arg Ile
          35                    40                    45
Leu Ala Gln Leu Arg Glu Leu Glu Lys Lys Lys Lys Leu Glu Asp Ala
          50                    55                    60
Lys Ser Gln Glu Gln Val Phe Gly Leu Asp Lys Glu Leu Lys Lys Leu
65                    70                    75                    80
Lys Lys Ala Val Ala Thr Ser Asp Lys Leu Ala Thr Ala Glu Leu Thr
                    85                    90                    95
Ile Ala Lys Asp Gln Leu Lys Ser Leu His Gly Thr Val Met Lys Ile
                   100                   105                   110
Asn Gln Glu Arg Ala Glu Glu Leu Gln Glu Ala Glu Arg Phe Ser Arg
                   115                   120                   125
Lys Ala Ala Gln Ala Ala Arg Asp Leu Thr Arg Ala Glu Ala Glu Ile
     130                   135                   140
Glu Leu Leu Gln Asn Leu Leu Arg Gln Lys Gly Glu Gln Phe Arg Leu
 145                   150                   155                   160
Glu Met Glu Lys Thr Gly Val Gly Thr Gly Ala Asn Ser Gln Val Leu
                   165                   170                   175
Glu Ile Glu Lys Leu Asn Glu Thr Met Glu Arg Gln Arg Thr Glu Ile
               180                   185                   190
Ala Arg Leu Gln Asn Val Leu Tyr Leu Thr Gly Ser Asp Asn Lys Gly
         195                   200                   205
Gly Phe Glu Asn Val Leu Glu Glu Ile Ala Glu Leu Arg Arg Glu Gly
     210                   215                   220
Ser Tyr Gln Asn Asp Tyr Ile Ser Ser Met Ala Asp Pro Phe Lys Arg
225                   230                   235                   240
Arg Gly Tyr Trp Tyr Phe Met Pro Pro Pro Ser Ser Lys Val Ser
               245                   250                   255
Ser His Ser Ser Gln Ala Thr Lys Asp Ser Gly Val Gly Leu Lys Tyr
         260                   265                   270
Ser Ala Ser Thr Pro Val Arg Lys Pro Arg Pro Gly Gln Gln Asp Gly
     275                   280                   285
Lys Glu Gly Ser Gln Pro Pro Pro Ala Ser Gly Tyr Trp Val Tyr Ser
     290                   295                   300
Pro
305


        <210> 927
        <211> 303
        <212>Amino acid
        <213> Homo sapiens




        <400> 927
Ser Asp Ala Ser Ser Phe Lys Thr Arg Val Ile Val Val Pro Arg Pro
 1               5                   10                   15
Arg Val Phe Pro Leu Gly Ser Ala Ile Thr Glu Asn Ser Leu Glu Ser
               20                   25                   30
Asp Ser Gln Ile Gly Gln Phe Gly Val Gly Phe Tyr Ser Ala Phe Leu
          35                   40                   45
Val Ala Asp Lys Val Ile Val Thr Ser Lys His Asn Asn Asp Thr Gln
     50                   55                   60
His Ile Trp Glu Ser Asp Ser Asn Glu Phe Ser Val Ile Ala Asp Pro
65                   70                   75                   80
Arg Gly Asn Thr Leu Gly Arg Gly Thr Thr Ile Thr Leu Val Leu Lys
               85                   90                   95
Glu Glu Ala Ser Asp Tyr Leu Glu Leu Asp Thr Ile Lys Asn Leu Val
              100                  105                  110
Lys Lys Tyr Ser Gln Phe Ile Asn Phe Pro Ile Tyr Val Trp Ser Ser
```

```
                 115                      120                      125
Lys Thr Glu Thr Val Glu Glu Pro Met Glu Glu Glu Glu Ala Ala Lys
         130                      135                      140
Glu Glu Lys Glu Glu Ser Asp Asp Glu Ala Ala Val Glu Glu Glu Glu
145                      150                      155                      160
Glu Glu Lys Lys Pro Lys Thr Lys Lys Val Glu Lys Thr Val Trp Asp
                 165                      170                      175
Trp Glu Leu Met Asn Asp Ile Lys Pro Ile Trp Gln Arg Pro Ser Lys
                 180                      185                      190
Glu Val Glu Glu Asp Glu Tyr Lys Ala Phe Tyr Lys Ser Phe Ser Lys
                 195                      200                      205
Glu Ser Asp Asp Pro Met Ala Tyr Ile His Phe Thr Ala Glu Gly Glu
         210                      215                      220
Val Thr Phe Lys Ser Ile Leu Phe Val Pro Thr Ser Ala Pro Arg Gly
225                      230                      235                      240
Leu Phe Asp Glu Tyr Gly Ser Lys Lys Ser Asp Tyr Ile Lys Leu Tyr
                 245                      250                      255
Val Arg Arg Val Phe Ile Thr Asp Asp Phe His Asp Met Met Pro Lys
                 260                      265                      270
Tyr Leu Asn Phe Val Lys Gly Val Val Asp Ser Asp Asp Leu Pro Leu
                 275                      280                      285
Asn Val Ser Arg Glu Thr Leu Gln Gln His Lys Leu Leu Lys Val
         290                      295                      300          303
```

```
        <210> 928
        <211> 147
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 928
Cys Gly Ser Trp Met Arg Arg Ala Leu Ile Pro Pro Cys Arg Gly Gly
1                5                      10                       15
Pro Ser Ala Ser Asp Arg Cys Cys Ser Cys Ser Pro Ser Gly Phe Ser
         20                      25                      30
Ala Gly Arg Gly Arg Cys Pro Val Gln Gly Cys Leu Arg Pro His Arg
         35                      40                      45
Val Gln Leu Leu Arg Arg Trp Gly Pro Gly Ser Pro Ala Gly Gln Arg
         50                      55                      60
Leu Ser Lys Gly Phe Gln Leu Leu Arg Trp Trp Gly Pro Gly Ser Pro
65                      70                      75                      80
Ala Pro Glu Pro Arg Lys Gly Pro Phe Pro Pro Pro Asp Pro Pro Trp
                 85                      90                      95
Pro Val Thr Ala Val Thr Val Met Ala Gly Ser Val Pro Ser Ala Gln
                 100                     105                     110
Ser Val Asp Ala Leu Glu Ser Pro Gly Pro Leu Ala Leu Glu Gly Pro
         115                     120                     125
Ser Ser Pro Arg Asn Leu Leu Trp Arg Glu Met Ser Ile Phe Leu Pro
         130                     135                     140
Gly Ile Phe
145     147
```

```
        <210> 929
        <211> 183
        <212>Amino acid
        <213> Homo sapiens
```

<400> 929

```
Pro Gly Pro Thr Pro Pro Pro Arg His Gly Ser Pro Pro His Arg Leu
1               5                   10                  15
Ile Arg Val Glu Thr Pro Gly Pro Pro Ala Pro Pro Ala Asp Glu Arg
            20                  25                  30
Ile Ser Gly Pro Pro Ala Ser Ser Asp Arg Leu Ala Ile Leu Glu Asp
        35                  40                  45
Tyr Ala Asp Pro Phe Asp Val Gln Glu Thr Gly Glu Gly Ser Ala Gly
    50                  55                  60
Ala Ser Gly Ala Pro Glu Lys Val Pro Glu Asn Asp Gly Tyr Met Glu
65                  70                  75                  80
Pro Tyr Glu Ala Gln Lys Met Met Ala Glu Ile Arg Gly Ser Lys Glu
                85                  90                  95
Thr Ala Thr Gln Pro Leu Pro Leu Tyr Asp Thr Pro Tyr Glu Pro Glu
                100                 105                 110
Glu Asp Gly Ala Thr Pro Glu Gly Glu Gly Ala Pro Trp Pro Arg Glu
            115                 120                 125
Ser Arg Leu Pro Glu Asp Asp Glu Arg Pro Pro Glu Glu Tyr Asp Gln
    130                 135                 140
Pro Trp Glu Trp Lys Lys Glu Arg Ile Ser Lys Ala Phe Ala Val Asp
145                 150                 155                 160
Ile Lys Val Ile Lys Asp Leu Pro Trp Pro Pro Pro Val Gly Gln Leu
                165                 170                 175
Asp Ser Ser Pro Ser Leu Pro
                180         183
```

<210> 930
<211> 187
<212> Amino acid
<213> Homo sapiens

<400> 930

```
Gln Phe Phe Ser Leu Phe Leu Arg Tyr Gln Ile His Thr Gly Leu Gln
1               5                   10                  15
His Ser Ile Ile Arg Pro Thr Gln Pro Asn Cys Leu Pro Leu Asp Asn
            20                  25                  30
Ala Thr Leu Pro Gln Lys Leu Lys Glu Val Gly Tyr Ser Thr His Met
        35                  40                  45
Val Gly Lys Trp His Leu Gly Phe Tyr Arg Lys Glu Cys Met Pro Thr
    50                  55                  60
Arg Arg Gly Phe Asp Thr Phe Phe Gly Ser Leu Leu Gly Ser Gly Asp
65                  70                  75                  80
Tyr Tyr Thr His Tyr Lys Cys Asp Ser Pro Gly Met Cys Gly Tyr Asp
                85                  90                  95
Leu Tyr Glu Asn Asp Asn Ala Ala Trp Asp Tyr Asp Asn Gly Ile Tyr
                100                 105                 110
Ser Thr Gln Met Tyr Thr Gln Arg Val Gln Gln Ile Leu Ala Ser His
            115                 120                 125
Asn Pro Thr Lys Pro Ile Phe Leu Tyr Ile Ala Tyr Gln Ala Val His
    130                 135                 140
Ser Pro Leu Gln Ala Pro Gly Arg Tyr Phe Glu His Tyr Arg Ser Ile
145                 150                 155                 160
Ile Asn Ile Asn Arg Arg Arg Tyr Ala Ala Met Leu Ser Cys Leu Asp
                165                 170                 175
Glu Ala Ile Asn Asn Val Thr Leu Ala Leu Lys
                180                 185     187
```

```
<210> 931
<211> 192
<212> Amino acid
<213> Homo sapiens
```

```
<400> 931
Arg Val Arg Lys Gly Arg Gly Gly Glu Arg Leu Gln Ser Pro Leu Arg
1               5                   10                  15
Val Pro Gln Lys Pro Glu Arg Pro Pro Leu Pro Pro Lys Pro Gln Phe
            20                  25                  30
Leu Asn Ser Gly Ala Tyr Pro Gln Lys Pro Leu Arg Asn Gln Gly Val
        35                  40                  45
Val Arg Thr Leu Ser Ser Ser Ala Gln Glu Asp Ile Ile Arg Trp Phe
    50                  55                  60
Lys Glu Glu Gln Leu Pro Leu Arg Ala Gly Tyr Gln Lys Thr Ser Asp
65                  70                  75                  80
Thr Ile Ala Pro Trp Phe His Gly Ile Leu Thr Leu Lys Lys Ala Asn
                85                  90                  95
Glu Leu Leu Leu Ser Thr Gly Met Pro Gly Ser Phe Leu Ile Arg Val
            100                 105                 110
Ser Glu Arg Ile Lys Gly Tyr Ala Leu Ser Tyr Leu Ser Glu Asp Gly
        115                 120                 125
Cys Lys His Phe Leu Ile Asp Ala Ser Ala Asp Ala Tyr Ser Phe Leu
        130                 135                 140
Gly Val Asp Gln Leu Gln His Ala Thr Leu Ala Asp Leu Val Glu Tyr
145                 150                 155                 160
His Lys Glu Glu Pro Ile Thr Ser Leu Gly Lys Glu Leu Leu Leu Tyr
                165                 170                 175
Pro Cys Gly Gln Gln Asp Gln Leu Pro Asp Tyr Leu Glu Leu Phe Glu
            180                 185                 190     192
```

```
<210> 932
<211> 545
<212> Amino acid
<213> Homo sapiens
```

```
<400> 932
Gly Ser Leu Glu Lys Ala Leu Phe Gln Leu Leu Lys Val Trp Gly Gln
1               5                   10                  15
Trp Ala Glu Gln Thr Arg Arg Leu Gln Arg Leu Asp Val Ser Leu Ser
            20                  25                  30
Val Ala Arg Val Arg Ser Ala Gly Pro Ser Cys Gln Asn Lys Gly Asp
        35                  40                  45
Leu Val Met Glu Ala Leu Leu Glu Gly Ile Gln Asn Arg Gly His Gly
    50                  55                  60
Gly Gly Phe Leu Thr Ser Cys Glu Ala Glu Leu Gln Glu Leu Met Lys
65                  70                  75                  80
Gln Ile Asp Ile Met Val Ala His Lys Lys Ser Glu Trp Glu Gly Arg
                85                  90                  95
Thr His Ala Leu Glu Thr Cys Leu Lys Ile Arg Glu Gln Glu Leu Lys
            100                 105                 110
Ser Leu Arg Ser Gln Leu Asp Val Thr His Lys Glu Val Gly Met Leu
```

```
              115                    120                    125
His Gln Gln Val Glu Glu His Glu Lys Ile Lys Gln Glu Met Thr Met
    130                    135                    140
Glu Tyr Lys Gln Glu Leu Lys Lys Leu His Glu Glu Leu Cys Ile Leu
145                    150                    155                    160
Lys Arg Ser Tyr Glu Lys Leu Gln Lys Lys Gln Met Arg Glu Phe Arg
                165                    170                    175
Gly Asn Thr Lys Asn His Arg Glu Asp Arg Ser Glu Ile Glu Arg Leu
            180                    185                    190
Thr Ala Lys Ile Glu Glu Phe Arg Gln Lys Ser Leu Asp Trp Glu Lys
        195                    200                    205
Gln Arg Leu Ile Tyr Gln Gln Gln Val Ser Ser Leu Glu Ala Gln Arg
    210                    215                    220
Lys Ala Leu Ala Glu Gln Ser Glu Ile Ile Gln Ala Gln Leu Val Asn
225                    230                    235                    240
Arg Lys Gln Lys Leu Glu Ser Val Glu Leu Ser Ser Gln Ser Glu Ile
                245                    250                    255
Gln His Leu Ser Ser Lys Leu Glu Arg Ala Asn Asp Thr Ile Cys Ala
            260                    265                    270
Asn Glu Leu Glu Ile Glu Arg Leu Thr Met Arg Val Asn Asp Leu Val
        275                    280                    285
Gly Thr Ser Met Thr Val Leu Gln Glu Gln Gln Lys Glu Glu Lys
    290                    295                    300
Leu Arg Glu Ser Glu Lys Leu Leu Glu Ala Leu Gln Glu Glu Lys Arg
305                    310                    315                    320
Glu Leu Lys Ala Ala Leu Gln Ser Gln Glu Asn Leu Ile His Glu Ala
            325                    330                    335
Arg Ile Gln Lys Glu Lys Leu Gln Glu Lys Val Lys Ala Thr Asn Thr
        340                    345                    350
Gln His Ala Val Glu Ala Ile Ser Leu Glu Ser Val Ser Ala Thr Cys
    355                    360                    365
Lys Gln Leu Ser Gln Glu Leu Met Glu Lys Tyr Glu Glu Leu Lys Arg
    370                    375                    380
Met Glu Ala His Asn Asn Glu Tyr Lys Ala Glu Ile Lys Lys Leu Lys
385                    390                    395                    400
Glu Gln Ile Leu Gln Gly Glu Gln Ser Tyr Ser Ser Ala Leu Glu Gly
                405                    410                    415
Met Lys Met Glu Ile Ser His Leu Thr Gln Glu Leu His Gln Arg Asp
            420                    425                    430
Ile Thr Ile Ala Ser Thr Lys Gly Ser Ser Ser Asp Met Glu Lys Arg
        435                    440                    445
Leu Arg Ala Glu Met Gln Lys Ala Glu Asp Lys Ala Val Glu His Lys
    450                    455                    460
Glu Ile Leu Asp Gln Leu Glu Ser Leu Lys Leu Glu Asn Arg His Leu
465                    470                    475                    480
Ser Glu Met Val Met Lys Leu Glu Leu Gly Leu His Glu Cys Ser Leu
                485                    490                    495
Pro Val Ser Pro Leu Gly Ser Ile Ala Thr Arg Phe Leu Glu Glu Glu
            500                    505                    510
Glu Leu Arg Ser His His Ile Leu Glu Arg Leu Asp Ala His Ile Glu
        515                    520                    525
Glu Leu Lys Arg Glu Ser Glu Lys Thr Val Arg Gln Phe Thr Ala Leu
    530                    535                    540
Lys
545
```

```
    <210> 933
    <211> 297
    <212> Amino acid
    <213> Homo sapiens
```

<400> 933

```
Thr Gly Phe Leu Gly Trp Ser Gln Gly Pro Ser Leu Thr Pro Thr Ser
1                   5                   10                  15
Leu Ser Ala Leu Tyr Pro Ser Gln Val Glu Glu Thr Gly Val Val Leu
            20                  25                  30
Ser Leu Glu Gln Thr Glu Gln His Ser Arg Arg Pro Ile Gln Arg Gly
            35                  40                  45
Ala Pro Ser Gln Lys Asp Thr Pro Asn Pro Gly Asp Ser Leu Asp Thr
    50                  55                  60
Pro Gly Pro Arg Ile Leu Ala Phe Leu His Pro Pro Ser Leu Ser Glu
65                  70                  75                  80
Ala Ala Leu Ala Ala Asp Pro Arg Arg Phe Cys Ser Pro Asp Leu Arg
                85                  90                  95
Arg Leu Leu Gly Pro Ile Leu Asp Gly Ala Ser Val Ala Ala Thr Pro
            100                 105                 110
Ser Thr Pro Leu Ala Thr Arg His Pro Gln Ser Pro Leu Ser Ala Asp
            115                 120                 125
Leu Pro Asp Glu Leu Pro Val Gly Thr Glu Asn Val His Arg Leu Phe
    130                 135                 140
Thr Ser Gly Lys Asp Thr Glu Ala Val Glu Thr Asp Leu Asp Ile Ala
145                 150                 155                 160
Gln Asp Ala Asp Ala Leu Asp Leu Glu Met Leu Ala Pro Tyr Ile Ser
                165                 170                 175
Met Asp Asp Asp Phe Gln Leu Asn Ala Ser Glu Gln Leu Pro Arg Ala
                180                 185                 190
Tyr His Arg Pro Leu Gly Ala Val Pro Arg Pro Arg Ala Arg Ser Phe
            195                 200                 205
His Gly Leu Ser Pro Pro Ala Leu Glu Pro Ser Leu Leu Pro Arg Trp
    210                 215                 220
Gly Ser Asp Pro Arg Leu Ser Cys Ser Ser Pro Ser Arg Gly Asp Pro
225                 230                 235                 240
Ser Ala Ser Ser Pro Met Ala Gly Ala Arg Lys Arg Thr Leu Ala Gln
                245                 250                 255
Ser Ser Lys Asp Glu Asp Glu Gly Val Glu Leu Leu Gly Val Arg Pro
            260                 265                 270
Pro Lys Arg Ser Pro Ser Pro Glu His Glu Asn Phe Leu Leu Phe Pro
    275                 280                 285
Leu Ser Leu Ser Phe Leu Leu Thr Gly
    290                 295     297
```

<210> 934
<211> 140
<212>Amino acid
<213> Homo sapiens

<400> 934

```
Glu Leu Gln Asp Cys Phe Asp Val His Asp Ala Ser Trp Glu Glu Gln
1                   5                   10                  15
Ile Phe Trp Gly Trp His Asn Asp Val His Ile Phe Asp Thr Lys Thr
            20                  25                  30
Gln Thr Trp Phe Gln Pro Glu Ile Lys Gly Gly Val Pro Pro Gln Pro
            35                  40                  45
Arg Ala Ala His Thr Cys Ala Val Leu Gly Asn Lys Gly Tyr Ile Phe
    50                  55                  60
Gly Gly Arg Val Leu Gln Thr Arg Met Asn Asp Leu His Tyr Leu Asn
65                  70                  75                  80
Leu Asp Thr Trp Thr Trp Ser Gly Arg Ile Thr Ile Asn Gly Glu Ser
```

```
                        85                    90                      95
Pro Lys His Arg Ser Trp His Thr Leu Thr Pro Ile Ala Asp Asp Lys
                       100                   105                     110
Leu Phe Leu Cys Gly Gly Leu Asn Ala Tyr Asn Met Pro Leu Ser Asp
                       115                   120                     125
Gly Trp Ile His Asn Val Thr Thr His Cys Trp Lys
                       130                   135                     140
```

```
        <210> 935
        <211> 97
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 935
Phe Phe Phe Leu Arg Thr Arg Ser His Ser Val Thr Pro Arg Trp Glu
 1                   5                   10                      15
Cys Ser Asp Asp Ile Thr Ala His Trp Gln Pro Gln Pro Trp Gly Ser
                    20                   25                      30
Ser Asp Pro Leu Thr Phe Ser Arg Pro Gln Val Val Val Pro Pro Arg
            35                   40                   45
His Thr Thr Leu Cys Pro Ala Asn Phe Phe Val Phe Cys Ile Phe Cys
        50                   55                   60
Arg Asn Arg Ile Ser Pro Cys Trp Pro Gly Trp Ser Arg Thr Pro Trp
65                   70                   75                      80
Ala Gln Leu Ile Arg Leu Pro Arg Pro Pro Lys Val Leu Gly Leu Gln
                    85                   90                      95
Val
97
```

```
        <210> 936
        <211> 245
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 936
Pro Arg Glu Gly Gln Val Lys Gln Gly Leu Leu Gly Asp Cys Trp Phe
 1                   5                   10                      15
Leu Cys Ala Cys Ala Ala Leu Gln Lys Ser Arg His Leu Leu Asp Gln
                    20                   25                      30
Val Ile Pro Pro Gly Gln Pro Ser Trp Ala Asp Gln Glu Tyr Arg Gly
            35                   40                   45
Ser Phe Thr Cys Arg Ile Trp Gln Phe Gly Arg Trp Val Glu Val Thr
        50                   55                   60
Thr Asp Asp Arg Leu Pro Cys Leu Ala Gly Arg Leu Cys Phe Ser Arg
65                   70                   75                      80
Cys Gln Arg Glu Asp Val Phe Trp Leu Pro Leu Leu Glu Lys Val Tyr
                    85                   90                      95
Ala Lys Val His Gly Ser Tyr Glu His Leu Trp Ala Gly Gln Val Ala
                   100                   105                     110
Asp Ala Leu Val Asp Leu Thr Gly Gly Leu Ala Glu Arg Trp Asn Leu
                   115                   120                     125
Lys Gly Val Ala Gly Ser Gly Gly Gln Gln Asp Arg Pro Gly Arg Trp
                   130                   135                     140
Glu His Arg Thr Cys Arg Gln Leu Leu His Leu Lys Asp Gln Cys Leu
```

```
       145                   150                   155                   160
Ile Ser Cys Cys Val Leu Ser Pro Arg Ala Gly Glu Ala Arg Gly Gln
                    165           170                   175
His Gly Arg Ala Ala Ala Ser Val Pro Pro Thr Ala Arg Pro Gln Ala
            180               185                   190
His Cys Ser Phe Leu Cys Asp Trp Leu His Ser Pro Val Arg Thr Lys
        195                   200                   205
Trp Glu Glu Val Ser Leu Phe Ser Arg Val Val Ser Ser Val Cys Asp
    210                   215                   220
Leu Pro Leu Leu Ser Ser Ser Arg Gly Thr Trp Pro Phe Ser Pro Leu
225                   230                   235                   240
Thr Ser Pro Phe His
                    245


        <210> 937
        <211> 211
        <212>Amino acid
        <213> Homo sapiens




        <400> 937
Ala Glu Cys Leu Glu Ala Ser Ile Ala Arg Tyr Ala His Arg Val Ala
 1               5                   10                  15
Asn Ser Arg Tyr Thr Phe Asp Gly Glu Thr Val Thr Leu Ser Pro Ser
            20                  25                  30
Gln Gly Val Asn Gln Leu His Gly Gly Pro Glu Gly Phe Asp Lys Arg
        35                  40                  45
Arg Trp Gln Ile Val Asn Gln Asn Asp Arg Gln Val Leu Phe Ala Leu
    50                  55                  60
Ser Ser Asp Asp Gly Asp Gln Gly Phe Pro Gly Asn Leu Gly Ala Thr
65                  70                  75                  80
Val Gln Tyr Arg Leu Thr Asp Asp Asn Arg Ile Ser Ile Thr Tyr Arg
            85                  90                  95
Ala Thr Val Asp Lys Pro Cys Pro Val Asn Met Thr Asn His Val Tyr
            100                 105                 110
Phe Asn Leu Asp Gly Glu Gln Ser Asp Val Arg Asn His Lys Leu Gln
        115                 120                 125
Ile Leu Ala Asp Glu Tyr Leu Pro Val Asp Glu Gly Gly Ile Pro His
    130                 135                 140
Asp Gly Leu Lys Ser Val Ala Gly Thr Ser Phe Asp Phe Arg Ser Ala
145                 150                 155                 160
Lys Ile Ile Ala Ser Glu Phe Leu Ala Asp Asp Asp Gln Arg Lys Val
                165                 170                 175
Lys Gly Tyr Asp His Ala Phe Leu Leu Gln Ala Lys Gly Asp Gly Lys
            180                 185                 190
Lys Val Ala Ala His Val Trp Ser Ala Asp Glu Lys Leu Gln Leu Lys
        195                 200                 205
Val Tyr Thr
    210 211


        <210> 938
        <211> 118
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 938
Pro Leu Ser Arg Phe Leu Ser Lys Glu Ser Gln Glu Asp Trp Gly Met
 1               5                   10                  15
Glu Arg Gln Ser Arg Val Met Ser Glu Lys Asp Glu Tyr Gln Phe Gln
            20                  25                  30
His Gln Gly Ala Val Glu Leu Leu Val Phe Asn Phe Leu Leu Ile Leu
            35                  40                  45
Thr Ile Leu Thr Ile Trp Leu Phe Lys Asn His Arg Phe Arg Phe Leu
        50                  55                  60
His Glu Thr Gly Gly Ala Met Val Tyr Asp Lys Pro Pro Lys Phe Ala
65                  70                  75                  80
Met Ser Arg Glu Gln Met Ser Gln Ser Cys Ser His Thr Ala His Asn
                85                  90                  95
Ala Ser Leu Leu Thr Asp Ala Gly Pro Leu Ser Cys Gly Glu Ser Arg
            100                 105                 110
Ala Ser Cys Leu Phe Leu
            115         118


        <210> 939
        <211> 143
        <212>Amino acid
        <213> Homo sapiens




        <400> 939
Asp Ser Lys Glu Pro Arg Leu Gln Gln Leu Gly Leu Leu Glu Glu Glu
 1               5                   10                  15
Gln Leu Arg Gly Leu Gly Phe Arg Gln Thr Arg Gly Tyr Lys Ser Leu
            20                  25                  30
Ala Gly Cys Leu Gly His Gly Pro Leu Val Leu Gln Leu Leu Ser Phe
            35                  40                  45
Thr Leu Leu Ala Gly Leu Leu Val Gln Val Ser Lys Val Pro Ser Ser
        50                  55                  60
Ile Ser Gln Glu Gln Ser Arg Gln Asp Ala Ile Tyr Gln Asn Leu Thr
65                  70                  75                  80
Gln Leu Lys Ala Ala Val Gly Glu Leu Ser Glu Lys Ser Lys Leu Gln
                85                  90                  95
Glu Ile Tyr Gln Glu Leu Thr Gln Leu Lys Ala Ala Val Gly Glu Leu
            100                 105                 110
Pro Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu Leu Thr Trp Leu
            115                 120                 125
Lys Ala Ala Val Gly Glu Leu Pro Glu Lys Ser Lys Met Gln Glu
        130                 135                 140     143


        <210> 940
        <211> 63
        <212>Amino acid
        <213> Homo sapiens




        <400> 940
Met Gln Ser Ile Ala Trp Gly His Arg Arg Asp Arg Gly Glu Ser Pro
 1               5                   10                  15
Leu Gly Trp Gly Gln Glu Ser Glu Ala Ser Pro Ser Ala Leu Thr Glu
            20                  25                  30
Ala Pro Lys Ala Ala His Thr Thr Arg Leu Gly Phe Leu Ala Ala Asn
```

```
          35                   40                   45
Asn Pro Asn Gly His Ser Gln Pro Gln Asp Ser Phe Leu Leu  *
          50                   55                   60   62
```

```
     <210> 941
     <211> 238
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 941
Phe Glu Thr Leu Ser Met Arg Gly Ile Pro His Met Leu Ala Leu Gly
1                 5                  10                  15
Pro Gln Gln Leu Leu Ala Gln Asp Glu Glu Gly Asp Thr Leu Leu His
          20                   25                   30
Leu Phe Ala Ala Arg Gly Leu Arg Trp Ala Ala Tyr Ala Ala Ala Glu
          35                   40                   45
Val Leu Gln Val Tyr Arg Arg Leu Asp Ile Arg Glu His Lys Gly Lys
     50                   55                   60
Thr Pro Leu Leu Val Ala Ala Ala Ala Asn Gln Pro Leu Ile Val Glu
65                   70                   75                   80
Asp Leu Leu Asn Leu Gly Ala Glu Pro Asn Ala Ala Asp His Gln Gly
               85                   90                   95
Arg Ser Val Leu His Val Ala Ala Thr Tyr Gly Leu Pro Gly Val Leu
          100                  105                  110
Leu Ala Val Leu Asn Ser Gly Val Gln Val Asp Leu Glu Ala Arg Asp
          115                  120                  125
Phe Glu Gly Leu Thr Pro Leu His Thr Ala Ile Leu Ala Leu Asn Val
130                  135                  140
Ala Met Arg Pro Ser Asp Leu Cys Pro Arg Val Leu Ser Thr Gln Ala
145                  150                  155                  160
Arg Asp Arg Leu Asp Cys Val His Met Leu Leu Gln Met Gly Ala Asn
               165                  170                  175
His Thr Ile Gln Val Ser Gly Asp Val Gly Gly Gln Thr Leu Gly Asp
          180                  185                  190
Cys Val Glu Trp Gly His Leu Asp Val Arg Glu Leu Gln Ala Asn Ala
          195                  200                  205
Asp Phe Ala Ser Ser Leu Leu Arg Ala Leu Glu His Val Thr Ser Leu
210                  215                  220
Leu Cys Ala Leu Arg Val Phe Cys Leu Phe Leu Cys Gln Leu
225                  230                  235        238
```

```
     <210> 942
     <211> 158
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 942
Asp Ala Trp Ala Asp Ala Trp Val Gly Thr Lys Met Ala Asp Leu Asp
1                 5                  10                  15
Ser Pro Pro Lys Leu Ser Gly Val Gln Gln Pro Ser Glu Gly Val Gly
          20                   25                   30
Gly Gly Arg Cys Ser Glu Ile Ser Ala Glu Leu Ile Arg Ser Leu Thr
          35                   40                   45
Glu Leu Gln Glu Leu Glu Ala Val Tyr Glu Arg Leu Cys Gly Glu Glu
```

```
          50                      55                      60
Lys Val Val Glu Arg Glu Leu Asp Ala Leu Leu Glu Gln Gln Asn Thr
65                      70                      75                      80
Ile Glu Ser Lys Met Val Thr Leu His Arg Met Gly Pro Asn Leu Gln
                    85                      90                      95
Leu Ile Glu Gly Asp Ala Lys Gln Leu Ala Gly Met Ile Thr Phe Thr
                100                     105                     110
Cys Asn Leu Ala Glu Asn Val Ser Ser Lys Val Arg Gln Leu Asp Leu
            115                     120                     125
Ala Lys Asn Arg Leu Tyr Gln Ala Ile Gln Arg Ala Asp Asp Ile Leu
        130                     135                     140
Asp Leu Lys Phe Cys Met Asp Gly Val Gln Thr Ala Leu Arg
145                     150                     155         158


        <210> 943
        <211> 235
        <212>Amino acid
        <213> Homo sapiens




        <400> 943
Ala Val Glu Phe Arg Val Pro Arg Ser Gly Ser Ala Tyr Leu Tyr Ser
1                   5                   10                      15
Tyr Val Thr Val Gly Glu Leu Trp Ala Phe Thr Thr Gly Trp Asn Leu
                20                      25                      30
Ile Leu Ser Tyr Val Ile Gly Thr Ala Ser Val Ala Arg Ala Trp Ser
            35                      40                      45
Ser Ala Phe Asp Asn Leu Ile Gly Asn His Ile Ser Lys Thr Leu Gln
        50                      55                      60
Gly Ser Ile Ala Leu His Val Pro His Val Leu Ala Glu Tyr Pro Asp
65                      70                      75                      80
Phe Phe Ala Leu Gly Leu Val Leu Leu Leu Thr Gly Leu Leu Ala Leu
                85                      90                      95
Gly Ala Ser Glu Ser Ala Leu Val Thr Lys Val Phe Thr Gly Val Asn
            100                     105                     110
Leu Leu Val Leu Gly Phe Val Met Ile Ser Gly Phe Val Lys Gly Asp
        115                     120                     125
Val His Asn Trp Lys Leu Thr Glu Glu Asp Tyr Glu Leu Ala Met Ala
    130                     135                     140
Glu Leu Asn Asp Thr Tyr Ser Leu Gly Pro Leu Gly Ser Gly Gly Phe
145                     150                     155                     160
Val Pro Phe Gly Phe Glu Gly Ile Leu Arg Gly Ala Ala Thr Cys Phe
                165                     170                     175
Tyr Ala Phe Val Gly Phe Asp Cys Ile Ala Thr Thr Gly Glu Glu Ala
                180                     185                     190
Gln Asn Pro Gln Arg Ser Ile Pro Met Gly Ile Gly Ile Ser Leu Ser
            195                     200                     205
Val Cys Phe Leu Ala Asp Phe Ala Val Ser Ser Ala Leu Thr Leu Met
        210                     215                     220
Met Pro Tyr Tyr Gln Leu Gln Pro Glu Ser Pro
225                     230                     235


        <210> 944
        <211> 284
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 944
Gly Phe His Pro Asn Thr Thr His Tyr Arg Ala Arg Ala Ala Ala Arg
 1               5                   10                  15
Ala Gly Ala Gly Ser Phe Val Gly Glu Val Ser Ala Val Asp Lys Asp
                20                  25                  30
Phe Gly Pro Asn Gly Glu Val Arg Tyr Ser Phe Glu Met Val Gln Pro
            35                  40                  45
Asp Phe Glu Leu His Ala Ile Ser Gly Glu Ile Thr Asn Thr His Gln
    50                  55                  60
Phe Asp Arg Glu Ser Leu Met Arg Arg Arg Gly Thr Ala Val Phe Ser
65                  70                  75                  80
Phe Thr Val Ile Ala Thr Asp Gln Gly Ile Pro Gln Pro Leu Lys Asp
                85                  90                  95
Gln Ala Thr Val His Val Tyr Met Lys Asp Ile Asn Asp Asn Ala Pro
            100                 105                 110
Lys Phe Leu Lys Asp Phe Tyr Gln Ala Thr Ile Ser Glu Ser Ala Ala
        115                 120                 125
Asn Leu Thr Gln Val Leu Arg Val Ser Ala Ser Asp Val Asp Glu Gly
        130                 135                 140
Asn Asn Gly Leu Ile His Tyr Ser Ile Ile Lys Gly Asn Glu Glu Arg
145                 150                 155                 160
Gln Phe Ala Ile Asp Ser Thr Ser Gly Gln Val Thr Leu Ile Gly Lys
                165                 170                 175
Leu Asp Tyr Glu Ala Thr Pro Ala Tyr Ser Leu Val Ile Gln Ala Val
            180                 185                 190
Asp Ser Gly Thr Ile Pro Leu Asn Ser Thr Cys Thr Leu Asn Ile Asp
        195                 200                 205
Ile Leu Asp Glu Asn Asp Asn Thr Pro Phe Phe Leu Leu Asn Gln His
    210                 215                 220
Phe Phe Val Asp Val Leu Glu Asn Met Arg Ile Gly Glu Leu Gly Ala
225                 230                 235                 240
Ser Gly Thr Ala Thr Asp Ser Asp Ser Gly Asp Ile Ala Asp Leu Tyr
                245                 250                 255
Tyr Lys Phe Thr Gly Thr Lys His Pro Pro Gly Thr Phe Ser Ile Ser
            260                 265                 270
Pro Lys His Leu Gly Val Phe Phe Leu Ala Gln Lys
        275                 280                 284


        <210> 945
        <211> 119
        <212>Amino acid
        <213> Homo sapiens




        <400> 945
Gly Asp Cys Tyr Asp Leu Tyr Gly Gly Glu Lys Phe Ala Thr Leu Ala
 1               5                   10                  15
Glu Leu Val Gln Tyr Tyr Met Glu His His Gly Gln Leu Lys Glu Lys
                20                  25                  30
Asn Gly Asp Val Ile Glu Leu Lys Asn Pro Leu Asn Cys Ala Asp Pro
            35                  40                  45
Thr Ser Gln Arg Trp Phe His Gly His Leu Ser Gly Lys Glu Ala Glu
    50                  55                  60
Lys Leu Leu Thr Glu Lys Gly Lys His Ser Ser Phe Leu Val Arg Glu
65                  70                  75                  80
Ser Gln Ser His Pro Gly Asp Phe Val Leu Ser Val Cys Thr Gly Asp
                85                  90                  95
Asp Lys Gly Glu Ser Asn Asp Gly Lys Ser Lys Val Thr His Val Met
```

```
                    100                   105                   110
Ile His Cys Gln Glu Leu Lys
         115             119
```

```
        <210> 946
        <211> 166
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 946
Ile Asp Ser Gly Asn Gln Asn Gly Gly Asn Asp Asp Lys Thr Lys Asn
 1               5                  10                  15
Ala Glu Arg Asn Tyr Leu Asn Val Leu Pro Gly Glu Phe Tyr Ile Thr
            20                  25                  30
Arg His Ser Asn Leu Ser Glu Ile His Val Ala Phe His Leu Cys Val
        35                  40                  45
Asp Asp His Val Lys Ser Gly Asn Ile Thr Ala Arg Asp Pro Ala Ile
    50                  55                  60
Met Gly Leu Arg Asn Ile Leu Lys Val Cys Cys Thr His Asp Ile Thr
65                  70                  75                  80
Thr Ile Ser Ile Pro Leu Leu Leu Val His Asp Met Ser Glu Glu Met
                85                  90                  95
Thr Ile Pro Trp Cys Leu Arg Arg Ala Glu Leu Val Phe Lys Cys Val
            100                 105                 110
Lys Gly Phe Met Met Glu Met Ala Ser Trp Asp Gly Gly Ile Ser Arg
        115                 120                 125
Thr Val Gln Phe Leu Val Pro Gln Ser Ile Ser Glu Glu Met Phe Tyr
    130                 135                 140
Gln Leu Ser Asn Met Leu Pro Gln Ile Phe Arg Val Ser Ser Thr Leu
145                 150                 155                 160
Thr Leu Thr Ser Lys His
                165 166
```

```
        <210> 947
        <211> 121
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 947
Ser Ile Leu Pro Ala Leu Leu Val Thr Ile Leu Ile Phe Met Asp Gln
 1               5                  10                  15
Gln Ile Thr Ala Val Ile Val Asn Arg Lys Glu Asn Lys Leu Lys Lys
            20                  25                  30
Ala Ala Gly Tyr His Leu Asp Leu Phe Trp Val Gly Ile Leu Met Ala
        35                  40                  45
Leu Cys Ser Phe Met Gly Leu Pro Trp Tyr Val Ala Ala Thr Val Ile
    50                  55                  60
Ser Ile Ala His Ile Asp Ser Leu Lys Met Glu Thr Glu Thr Ser Ala
65                  70                  75                  80
Pro Gly Glu Gln Pro Gln Phe Leu Gly Val Arg Glu Gln Arg Val Thr
                85                  90                  95
Gly Ile Ile Val Phe Ile Leu Thr Gly Ile Ser Val Phe Leu Ala Pro
            100                 105                 110
Ile Leu Lys Cys Ile Pro Leu Pro Val
```

115   120 121

<210> 948
<211> 191
<212>Amino acid
<213> Homo sapiens

<400> 948
Gly Ala Ser Arg Val Glu Ala Gly Ser Ala Asn Gly Met Leu Ile Asp
1   5   10   15
Gly Gly Ser Gln Ile Val Lys Val Gln Gly His Ala Asp Gly Thr Thr
            20   25   30
Ile Asn Lys Ser Gly Ser Gln Asp Val Val Gln Gly Ser Leu Ala Thr
            35   40   45
Asn Thr Thr Ile Asn Gly Gly Arg Gln Tyr Val Glu Gln Ser Thr Val
    50   55   60
Glu Thr Thr Thr Ile Lys Asn Gly Gly Glu Gln Arg Val Tyr Glu Ser
65   70   75   80
Arg Ala Leu Asp Thr Thr Ile Glu Gly Gly Thr Gln Ser Leu Asn Ser
            85   90   95
Lys Ser Thr Ala Lys Asn Thr His Ile Tyr Ser Gly Gly Thr Gln Ile
            100   105   110
Val Asp Asn Thr Ser Thr Ser Asp Val Ile Glu Val Tyr Ser Gly Gly
        115   120   125
Val Leu Asp Val Arg Gly Gly Thr Ala Thr Asn Val Thr Gln His Asp
    130   135   140
Gly Ala Ile Leu Lys Thr Asn Thr Asn Gly Thr Thr Val Ser Gly Thr
145   150   155   160
Asn Ser Glu Gly Ala Phe Ser Ile His Asn His Val Ala Asp Asn Val
            165   170   175
Leu Leu Glu Asn Gly Gly His Leu Asp Ile Asn Ala Tyr Gly Ser
            180   185   190 191

<210> 949
<211> 98
<212>Amino acid
<213> Homo sapiens

<400> 949
Phe Phe Ser Ser Ile Gln Leu Thr Asp Asp Gln Gly Pro Val Leu Met
1   5   10   15
Thr Thr Val Ala Met Pro Val Phe Ser Lys Gln Asn Glu Thr Arg Ser
            20   25   30
Lys Gly Ile Leu Leu Gly Val Val Gly Thr Asp Val Pro Val Lys Glu
            35   40   45
Leu Leu Lys Thr Ile Pro Lys Tyr Lys Val Met Asn Asp Leu Ile Pro
    50   55   60
Glu Ile Lys Ala Thr Glu Met Pro Arg Ala Leu Phe Ser Gln Ser Ser
65   70   75   80
Gly Phe Lys Leu Tyr Phe Gly Ala Met Phe Leu Leu Thr Thr Ile Thr
            85   90   95
Ala Cys
    98

523

```
<210> 950
<211> 196
<212>Amino acid
<213> Homo sapiens
```

```
<400> 950
Ser Cys Ser Gly Thr Gly Thr Asn Ala Cys Tyr Met Glu Asp Met Ser
1               5                   10                  15
Asn Ile Asp Leu Val Glu Gly Asp Glu Gly Arg Met Cys Ile Asn Thr
            20                  25                  30
Glu Trp Gly Ala Phe Gly Asp Asp Gly Ala Leu Glu Asp Ile Arg Thr
            35                  40                  45
Glu Phe Asp Arg Glu Leu Asp Leu Gly Ser Leu Asn Pro Gly Lys Gln
    50                  55                  60
Leu Phe Glu Lys Met Ile Ser Gly Leu Tyr Leu Gly Glu Leu Val Arg
65                  70                  75                  80
Leu Ile Leu Leu Lys Met Ala Lys Ala Gly Leu Leu Phe Gly Gly Glu
                85                  90                  95
Lys Ser Ser Ala Leu His Thr Lys Gly Lys Ile Glu Thr Arg His Val
            100                 105                 110
Ala Ala Met Glu Lys Tyr Lys Glu Gly Leu Ala Asn Thr Arg Glu Ile
            115                 120                 125
Leu Val Asp Leu Gly Leu Glu Pro Ser Glu Ala Asp Cys Ile Ala Val
            130                 135                 140
Gln His Val Cys Thr Ile Val Ser Phe Arg Ser Ala Asn Leu Cys Ala
145                 150                 155                 160
Ala Ala Leu Ala Ala Ile Leu Thr Arg Leu Arg Glu Asn Lys Lys Val
                165                 170                 175
Glu Arg Leu Arg Thr Thr Val Gly Met Asp Gly Thr Leu Tyr Lys Ile
            180                 185                 190
His Pro Gln Tyr
        195 196
```

```
<210> 951
<211> 721
<212>Amino acid
<213> Homo sapiens
```

```
<400> 951
Phe Val Ala Ile Ala Thr Asn Gly Val Val Pro Ala Gly Gly Ser Tyr
1               5                   10                  15
Tyr Met Ile Ser Arg Ser Leu Gly Pro Glu Phe Gly Gly Ala Val Gly
            20                  25                  30
Leu Cys Phe Tyr Leu Gly Thr Thr Phe Ala Gly Ala Met Tyr Ile Leu
            35                  40                  45
Gly Thr Ile Glu Ile Leu Leu Ala Tyr Leu Phe Pro Ala Met Ala Ile
    50                  55                  60
Phe Lys Ala Glu Asp Ala Ser Gly Glu Ala Ala Ala Met Leu Asn Asn
65                  70                  75                  80
Met Arg Val Tyr Gly Thr Cys Val Leu Thr Cys Met Ala Thr Val Val
                85                  90                  95
Phe Val Gly Val Lys Tyr Val Asn Lys Phe Ala Leu Val Phe Leu Gly
            100                 105                 110
Cys Val Ile Leu Ser Ile Leu Ala Ile Tyr Ala Gly Val Ile Lys Ser
```

```
            115                    120                    125
Ala Phe Asp Pro Pro Asn Phe Pro Ile Cys Leu Leu Gly Asn Arg Thr
    130                    135                    140
Leu Ser Arg His Gly Phe Asp Val Cys Ala Lys Leu Ala Trp Glu Gly
145                    150                    155                    160
Asn Glu Thr Val Thr Thr Arg Leu Trp Gly Leu Phe Cys Ser Ser Arg
                   165                    170                    175
Phe Leu Asn Ala Thr Cys Asp Glu Tyr Phe Thr Arg Asn Asn Val Thr
            180                    185                    190
Glu Ile Gln Gly Ile Pro Gly Ala Ala Ser Gly Leu Ile Lys Glu Asn
        195                    200                    205
Leu Trp Ser Ser Tyr Leu Thr Lys Gly Val Ile Val Glu Arg Ser Gly
    210                    215                    220
Met Thr Ser Val Gly Leu Ala Asp Gly Thr Pro Ile Asp Met Asp His
225                    230                    235                    240
Pro Tyr Val Phe Ser Asp Met Thr Ser Tyr Phe Thr Leu Leu Val Gly
                   245                    250                    255
Ile Tyr Phe Pro Ser Val Thr Gly Ile Met Ala Gly Ser Asn Arg Ser
            260                    265                    270
Gly Asp Leu Arg Asp Ala Gln Lys Ser Ile Pro Thr Gly Thr Ile Leu
            275                    280                    285
Ala Ile Ala Thr Thr Ser Ala Val Tyr Ile Ser Ser Val Val Leu Phe
        290                    295                    300
Gly Ala Cys Ile Glu Gly Val Val Leu Arg Asp Lys Phe Gly Glu Ala
305                    310                    315                    320
Val Asn Gly Asn Leu Val Val Gly Thr Leu Ala Trp Pro Ser Pro Trp
                   325                    330                    335
Val Ile Val Ile Gly Ser Phe Phe Ser Thr Cys Gly Ala Gly Leu Gln
            340                    345                    350
Ser Leu Thr Gly Ala Pro Arg Leu Leu Gln Ala Ile Ser Arg Asp Gly
        355                    360                    365
Ile Val Pro Phe Leu Gln Val Phe Gly His Gly Lys Ala Asn Gly Glu
    370                    375                    380
Pro Thr Trp Ala Leu Leu Leu Thr Ala Cys Ile Cys Glu Ile Gly Ile
385                    390                    395                    400
Leu Ile Ala Ser Leu Asp Glu Val Ala Pro Ile Leu Ser Met Phe Phe
                   405                    410                    415
Leu Met Cys Tyr Met Phe Val Asn Leu Ala Cys Ala Val Gln Thr Leu
            420                    425                    430
Leu Arg Thr Pro Asn Trp Arg Pro Arg Phe Arg Tyr Tyr His Trp Thr
        435                    440                    445
Leu Ser Phe Leu Gly Met Ser Leu Cys Leu Ala Leu Met Phe Ile Cys
    450                    455                    460
Ser Trp Tyr Tyr Ala Leu Val Ala Met Leu Ile Ala Gly Leu Ile Tyr
465                    470                    475                    480
Lys Tyr Ile Glu Tyr Arg Gly Ala Lys Lys Glu Trp Gly Asp Gly Ile
                   485                    490                    495
Arg Gly Leu Ser Leu Ser Ala Ala Arg Tyr Ala Leu Leu Arg Leu Glu
            500                    505                    510
Glu Gly Pro Pro His Thr Lys Asn Trp Arg Pro Gln Leu Leu Val Leu
        515                    520                    525
Val Arg Val Asp Gln Asp Gln Asn Val Val His Pro Gln Leu Leu Ser
    530                    535                    540
Leu Thr Ser Gln Leu Lys Ala Gly Lys Gly Leu Thr Ile Val Gly Ser
545                    550                    555                    560
Val Leu Glu Gly Thr Phe Leu Glu Asn His Pro Gln Ala Gln Arg Ala
                   565                    570                    575
Glu Glu Ser Ile Arg Arg Leu Met Glu Ala Glu Lys Val Lys Gly Phe
            580                    585                    590
Cys Gln Val Val Ile Ser Ser Asn Leu Arg Asp Gly Val Ser His Leu
        595                    600                    605
Ile Gln Ser Gly Gly Leu Gly Gly Leu Gln His Asn Thr Val Leu Val
    610                    615                    620
Gly Trp Pro Arg Asn Trp Arg Gln Lys Glu Asp His Gln Thr Trp Arg
```

```
625                          630                      635                          640
Asn Phe Ile Glu Leu Val Arg Glu Thr Thr Ala Gly His Leu Ala Leu
                645                          650                          655
Leu Val Thr Lys Asn Val Ser Met Phe Pro Gly Asn Pro Glu Arg Phe
                660                          665                          670
Ser Glu Gly Ser Ile Asp Arg Trp Gly Ile Gly His Asp Gly Gly Met
                675                          680                          685
Leu Met Leu Val Pro Phe Leu Leu Arg His His Lys Val Trp Arg Lys
                690                          695                          700
Cys Lys Met Arg Ile Phe Thr Val Ala Gln Met Val Asp Met His Ala
705                           710                      715                          720
Met
721
```

```
        <210> 952
        <211> 42
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 952
Phe Tyr Leu Arg Leu Leu Ser Phe Phe Cys Phe Gln Glu His Glu Lys
1                   5                   10                      15
Arg Cys Trp Ser Val Asp Phe Asn Leu Met Asp Pro Lys Leu Leu Ala
                20                          25                      30
Ser Gly Ser Asp Asp Ala Lys Gly Thr Val
                35                          40        42
```

```
        <210> 953
        <211> 80
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 953
Arg Asn Ser Lys Ala Met His Arg Ser Ser Cys Asp Gly Pro Leu Leu
1                   5                   10                      15
Ser Leu Pro Ser Val Gly Arg Ser Ala Thr His Ala Leu Val Gln Ala
                20                          25                      30
Gln Leu Ile Cys Ser Gly Ala Arg Arg Gly Met His Ala Phe Ile Val
                35                          40                      45
Pro Ile Arg Ser Leu Gln Asp His Thr Pro Leu Pro Gly Lys Pro Ile
    50                          55                      60
Met Leu Pro Gln Gly Thr Leu Pro Gly Gly Glu Pro Arg Trp Pro Pro
65                          70                      75                          80
```

```
        <210> 954
        <211> 202
        <212>Amino acid
        <213> Homo sapiens
```

<400> 954

```
Cys Gly Thr Leu Ile Leu Gln Ala Arg Ala Tyr Val Gly Pro His Val
1               5                   10                  15
Leu Ala Val Val Thr Arg Thr Gly Phe Cys Thr Ala Lys Gly Gly Leu
            20                  25                  30
Val Ser Ser Ile Leu His Pro Arg Pro Ile Asn Phe Lys Phe Tyr Lys
        35                  40                  45
His Ser Met Lys Phe Val Ala Ala Leu Ser Val Leu Ala Leu Leu Gly
    50                  55                  60
Thr Ile Tyr Ser Ile Phe Ile Leu Tyr Arg Asn Arg Val Pro Leu Asn
65                  70                  75                  80
Glu Ile Val Ile Arg Ala Leu Asp Leu Val Thr Val Val Val Pro Pro
                85                  90                  95
Ala Leu Pro Ala Ala Met Thr Val Cys Thr Leu Tyr Ala Gln Ser Arg
            100                 105                 110
Leu Arg Arg Gln Gly Ile Phe Cys Ile His Pro Leu Arg Ile Asn Leu
        115                 120                 125
Gly Gly Lys Leu Gln Leu Val Cys Phe Asp Lys Thr Gly Thr Leu Thr
    130                 135                 140
Glu Asp Gly Leu Asp Val Met Gly Val Val Pro Leu Lys Gly Gln Ala
145                 150                 155                 160
Phe Leu Pro Leu Val Pro Glu Pro Arg Arg Leu Pro Val Gly Pro Leu
                165                 170                 175
Leu Arg Ala Leu Ala Thr Cys His Ala Leu Ser Arg Leu Gln Asp Thr
            180                 185                 190
Pro Val Gly Asp Pro Met Asp Leu Lys Met
            195                 200     202
```

<210> 955
<211> 188
<212>Amino acid
<213> Homo sapiens

<400> 955

```
Gln Ile Glu Tyr Phe Arg Ser Leu Leu Asp Glu His His Ile Ser Tyr
1               5                   10                  15
Val Ile Asp Glu Asp Val Lys Ser Gly Arg Tyr Met Glu Leu Glu Gln
            20                  25                  30
Arg Tyr Met Asp Leu Ala Glu Asn Ala Arg Phe Glu Arg Glu Gln Leu
        35                  40                  45
Leu Gly Val Gln Gln His Leu Ser Asn Thr Leu Lys Met Ala Glu Gln
    50                  55                  60
Asp Asn Lys Glu Ala Gln Glu Met Ile Gly Ala Leu Lys Glu Arg Ser
65                  70                  75                  80
His His Met Glu Arg Ile Ile Glu Ser Glu Gln Lys Gly Lys Ala Ala
                85                  90                  95
Leu Ala Ala Thr Leu Glu Glu Tyr Lys Ala Thr Val Ala Ser Asp Gln
            100                 105                 110
Ile Glu Met Asn Arg Leu Lys Ala Gln Leu Glu Asn Glu Lys Gln Lys
        115                 120                 125
Val Ala Glu Leu Tyr Ser Ile His Asn Ser Gly Asp Lys Ser Asp Ile
    130                 135                 140
Gln Asp Leu Leu Glu Ser Val Arg Leu Asp Lys Glu Lys Ala Glu Thr
145                 150                 155                 160
Leu Ala Ser Ser Leu Gln Glu Asp Leu Ala His Thr Arg Asn Asp Ala
                165                 170                 175
Asn Arg Leu Gln Asp Ala Ile Ala Lys Gly Arg Gly
```

        180   185   188

        <210> 956
        <211> 132
        <212>Amino acid
        <213> Homo sapiens

        <400> 956
Ala Arg Tyr Arg Phe Thr Leu Ser Ala Arg Thr Gln Val Gly Ser Gly
1   5   10   15
Glu Ala Val Thr Glu Glu Ser Pro Ala Pro Pro Asn Glu Ala Thr Pro
            20   25   30
Thr Ala Ala Pro Pro Thr Leu Pro Pro Thr Thr Val Gly Ala Thr Gly
        35   40   45
Ala Val Ser Ser Thr Asp Ala Thr Ala Ile Ala Ala Thr Thr Glu Ala
    50   55   60
Thr Thr Val Pro Ile Ile Pro Thr Val Ala Pro Thr Thr Met Ala Thr
65   70   75   80
Thr Thr Thr Val Ala Thr Thr Thr Thr Thr Thr Ala Ala Ala Thr Thr
            85   90   95
Thr Thr Glu Ser Pro Pro Thr Thr Thr Ser Gly Thr Lys Ile His Glu
            100   105   110
Ser Ala Pro Asp Glu Gln Ser Ile Trp Asn Val Thr Val Leu Pro Asn
    115   120   125
Ser Lys Trp Ala
    130   132

        <210> 957
        <211> 220
        <212>Amino acid
        <213> Homo sapiens

        <400> 957
Leu Lys Ser Thr Gln Asp Glu Ile Asn Gln Ala Arg Ser Lys Leu Ser
1   5   10   15
Gln Leu His Glu Ser Arg Gln Glu Ala His Arg Ser Leu Glu Gln Tyr
            20   25   30
Asp Gln Val Leu Asp Gly Ala His Gly Ala Ser Leu Thr Asp Leu Ala
            35   40   45
Asn Leu Ser Glu Gly Val Ser Leu Ala Glu Arg Gly Ser Phe Gly Ala
    50   55   60
Met Asp Asp Pro Phe Lys Asn Lys Ala Leu Leu Phe Ser Asn Asn Thr
65   70   75   80
Gln Glu Leu His Pro Asp Pro Phe Gln Thr Glu Asp Pro Phe Lys Ser
            85   90   95
Asp Pro Phe Lys Gly Ala Asp Pro Phe Lys Gly Asp Pro Phe Gln Asn
            100   105   110
Asp Pro Phe Ala Glu Gln Gln Thr Thr Ser Thr Asp Pro Phe Gly Gly
    115   120   125
Asp Pro Phe Lys Glu Ser Asp Pro Phe Arg Gly Ser Ala Thr Asp Asp
    130   135   140
Phe Phe Lys Lys Gln Thr Lys Asn Asp Pro Phe Thr Ser Asp Pro Phe
145   150   155   160
Thr Lys Asn Pro Ser Leu Pro Ser Lys Leu Asp Pro Phe Glu Ser Ser

```
                        165                     170                     175
Asp Pro Phe Ser Ser Ser Ser Val Ser Ser Lys Gly Ser Asp Pro Phe
                180                     185                     190
Gly Thr Leu Asp Pro Phe Gly Ser Gly Ser Phe Asn Ser Ala Glu Gly
            195                     200                     205
Phe Ala Asp Phe Ser Thr Ile Glu Gly Arg Arg Gly
        210                     215                     220
```

```
        <210> 958
        <211> 250
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 958
Arg Thr Arg Gly Gly Ser Gly Asn Ser Ser Gln Pro Ser Leu Arg Glu
 1               5                    10                     15
Gly His Asp Lys Pro Val Phe Asn Gly Ala Gly Lys Pro His Ser Ser
            20                      25                     30
Thr Ser Ser Pro Ser Val Pro Lys Thr Ser Ala Ser Arg Thr Gln Lys
        35                      40                      45
Ser Ala Val Glu His Lys Ala Lys Lys Ser Leu Ser His Pro Ser His
        50                      55                      60
Ser Arg Pro Gly Pro Met Val Thr Pro His Asn Lys Ala Lys Ser Pro
 65                      70                      75                     80
Gly Val Arg Gln Pro Gly Ser Ser Ser Ser Ser Ala Pro Gly Gln Pro
                    85                      90                      95
Ser Thr Gly Val Ala Arg Pro Thr Val Ser Ser Gly Pro Val Pro Arg
            100                     105                     110
Arg Gln Asn Gly Ser Ser Ser Ser Gly Pro Glu Arg Ser Ile Ser Gly
        115                     120                     125
Ser Lys Lys Pro Thr Asn Asp Ser Asn Pro Ser Arg Arg Thr Val Ser
        130                     135                     140
Gly Thr Cys Gly Pro Gly Gln Pro Ala Ser Ser Ser Gly Gly Pro Gly
145                     150                     155                     160
Arg Pro Ile Ser Gly Ser Val Ser Ser Ala Arg Pro Leu Gly Ser Ser
                165                     170                     175
Arg Gly Pro Gly Arg Pro Val Ser Ser Pro His Glu Leu Arg Arg Pro
            180                     185                     190
Val Ser Gly Leu Gly Pro Pro Gly Arg Ser Val Ser Gly Pro Gly Arg
        195                     200                     205
Ser Ile Ser Gly Ser Ile Pro Ala Gly Arg Thr Val Ser Asn Ser Val
        210                     215                     220
Pro Gly Arg Pro Val Ser Ser Leu Gly Pro Gly Gln Thr Val Ser Ser
225                     230                     235                     240
Ser Gly Pro Thr Ile Lys Pro Lys Cys Thr
                245                     250
```

```
        <210> 959
        <211> 48
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 959
Arg Gly Lys Gly Ile Thr Pro Arg Tyr His Leu Cys Ile Ser Asp Pro
```

529

```
 1                      5                    10                       15
His Asn Leu Lys Ile Cys Cys Arg Val Asn Gly Glu Val Val Gln Ser
            20                    25                    30
Ser Asn Thr Asn Gln Met Val Phe Lys Thr Glu Asp Leu Ile Ala Trp
            35                    40                    45            48
```

```
        <210> 960
        <211> 63
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 960
Val Val Ala Val Thr Arg Trp Leu Cys Glu Asn Gly Val Ser Tyr Leu
 1                      5                    10                       15
Arg Lys Cys Val Cys Ser Ala Cys Arg His Gly Thr Arg Cys Ala Gly
            20                    25                    30
Glu Val Ala Ala Ala Ala Asn Asn Ser His Cys Thr Val Gly Ile Ala
            35                    40                    45
Phe Asn Ala Lys Ile Gly Gly Met Gly Asn Gln Leu Thr Trp Met
            50                    55                    60            63
```

```
        <210> 961
        <211> 59
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 961
Gly Ala Pro Pro Pro Phe Val Pro Thr Leu Lys Ser Asp Asp Asp Thr
 1                      5                    10                       15
Ser Asn Phe Asp Glu Pro Lys Lys Asn Ser Trp Val Ser Ser Ser Pro
            20                    25                    30
Cys Gln Leu Ser Pro Ser Gly Phe Ser Gly Glu Glu Leu Pro Phe Val
            35                    40                    45
Gly Phe Ser Tyr Ser Lys Ala Leu Gly Ile Leu
            50                    55            59
```

```
        <210> 962
        <211> 140
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 962
Phe Val Glu Arg Leu Ala His Leu His Ala Ala Cys Ala Pro Arg Arg
 1                      5                    10                       15
Lys Val Ala Leu Leu Leu Glu Val Cys Arg Asp Val Tyr Ala Gly Leu
            20                    25                    30
Ala Arg Gly Glu Asn Gln Asp Pro Leu Gly Ala Asp Ala Phe Leu Pro
```

```
                35                        40                       45
Ala Leu Thr Glu Glu Leu Ile Trp Ser Pro Asp Ile Gly Asp Thr Gln
        50                        55                       60
Leu Asp Val Glu Phe Leu Met Glu Leu Leu Asp Pro Asp Glu Leu Arg
65                        70                       75                       80
Gly Glu Ala Gly Tyr Tyr Leu Thr Thr Trp Phe Gly Ala Leu His His
                        85                        90                       95
Ile Ala His Tyr Gln Pro Glu Thr Asp Arg Ala Pro Arg Gly Leu Ser
                100                       105                      110
Ser Glu Ala Arg Ala Ser Leu His Gln Trp His Arg Arg Arg Thr Leu
            115                       120                      125
His Arg Lys Asp His Pro Arg Ala Gln Gln Leu Asp
        130                       135                      140
```

```
<210> 963
<211> 153
<212> Amino acid
<213> Homo sapiens
```

```
<400> 963
Phe Trp Met Asp Pro Tyr Asn Pro Leu Asn Phe Lys Ala Pro Phe Gln
1                   5                        10                       15
Thr Ser Gly Glu Asn Glu Lys Gly Cys Arg Asp Ser Lys Thr Pro Ser
                20                        25                       30
Glu Ser Ile Val Ala Ile Ser Glu Cys His Thr Leu Leu Ser Cys Lys
            35                        40                       45
Val Gln Leu Leu Gly Ser Gln Glu Ser Glu Cys Pro Asp Ser Val Gln
        50                        55                       60
Arg Asp Val Leu Ser Gly Gly Arg His Thr His Val Lys Arg Lys Lys
65                        70                       75                       80
Val Thr Phe Leu Glu Glu Val Thr Glu Tyr Tyr Ile Ser Gly Asp Glu
                        85                        90                       95
Asp Arg Lys Gly Pro Trp Glu Glu Phe Ala Arg Asp Gly Cys Arg Phe
                100                       105                      110
Gln Lys Arg Ile Gln Glu Thr Glu Asp Ala Ile Gly Tyr Cys Leu Thr
            115                       120                      125
Phe Glu His Arg Glu Arg Met Phe Asn Arg Leu Gln Gly Thr Cys Phe
        130                       135                      140
Lys Gly Leu Asn Val Leu Lys Gln Cys
145                   150                       153
```

```
<210> 964
<211> 54
<212> Amino acid
<213> Homo sapiens
```

```
<400> 964
Ala Ala Ser Thr Ala Tyr Ser Phe Phe Gly Thr Val Glu Asn Met Ala
1                   5                        10                       15
Pro Lys Val Val Asn Arg Pro Gly His Thr Gln Ser Ala Asp Trp Gly
                20                        25                       30
Ser Phe Gly Gly Leu Met Gly Arg Phe Glu Phe Gly Ile Phe Leu Lys
            35                        40                       45
Gly Lys Glu Ile Val Lys
```

531

```
        50                    54


        <210> 965
        <211> 39
        <212>Amino acid
        <213> Homo sapiens




        <400> 965
Gly Phe Val Phe Leu Pro Gly Pro Met Ser Val Gly Leu Asp Phe Ser
1               5                   10                  15
Leu Pro Gly Met Glu His Val Tyr Gly Ile Pro Glu His Ala Asp Asn
            20                  25                  30
Leu Arg Leu Lys Val Thr Glu
        35              39


        <210> 966
        <211> 130
        <212>Amino acid
        <213> Homo sapiens




        <400> 966
Gly Ser Glu Cys Gln Gly Thr Asp Leu Asp Thr Arg Asn Cys Thr Ser
1               5                   10                  15
Asp Leu Cys Val His Thr Ala Ser Gly Pro Glu Asp Val Ala Leu Tyr
            20                  25                  30
Val Gly Leu Ile Ala Val Ala Val Cys Leu Val Leu Leu Leu Leu Val
            35                  40                  45
Leu Ile Leu Val Tyr Cys Arg Lys Lys Glu Gly Leu Asp Ser Asp Val
        50              55                  60
Ala Asp Ser Ser Ile Leu Thr Ser Gly Phe Gln Pro Val Ser Ile Lys
65                  70                  75                  80
Pro Ser Lys Ala Asp Asn Pro His Leu Leu Thr Ile Gln Pro Asp Leu
                85                  90                  95
Ser Thr Thr Thr Thr Thr Tyr Gln Gly Ser Leu Cys Pro Arg Gln Asp
            100                 105                 110
Gly Pro Ser Pro Lys Phe Gln Leu Thr Asn Gly His Leu Leu Ser Pro
            115                 120                 125
Leu Gly
    130



        <210> 967
        <211> 259
        <212>Amino acid
        <213> Homo sapiens




        <400> 967
Leu Ile Tyr Asn Glu Asp Met Ile Cys Trp Ile Glu Ser Arg Glu Ser
1               5                   10                  15
Ser Asn Gln Leu Lys Cys Ile Gln Ile Thr Lys Ala Gly Gly Leu Thr
```

```
               20                    25                    30
Asp Glu Trp Thr Ile Asn Ile Leu Gln Ser Phe His Asn Val Gln Gln
          35                  40                    45
Met Ala Ile Asp Trp Leu Thr Arg Asn Leu Tyr Phe Val Asp His Val
      50                  55                    60
Gly Asp Arg Ile Phe Val Cys Asn Ser Asn Gly Ser Val Cys Val Thr
  65                  70                    75                  80
Leu Ile Asp Leu Glu Leu His Asn Pro Lys Ala Ile Ala Val Asp Pro
              85                  90                    95
Ile Ala Gly Lys Leu Phe Phe Thr Asp Tyr Gly Asn Val Ala Lys Val
          100                 105                   110
Glu Arg Cys Asp Met Asp Gly Met Asn Arg Thr Arg Ile Ile Asp Ser
          115                 120                   125
Lys Thr Glu Gln Pro Ala Ala Leu Ala Leu Asp Leu Val Asn Lys Leu
      130                 135                   140
Val Tyr Trp Val Asp Leu Tyr Leu Asp Tyr Val Gly Val Val Asp Tyr
145                 150                   155                   160
Gln Gly Lys Asn Arg His Ala Val Ile Gln Gly Arg Gln Val Arg His
              165                 170                   175
Leu Tyr Gly Ile Thr Val Phe Glu Asp Tyr Leu Tyr Ala Thr Asn Ser
          180                 185                   190
Asp Ser Tyr Asn Ile Val Arg Ile Ser Arg Phe Asn Gly Thr Asp Ile
          195                 200                   205
His Ser Leu Ile Lys Ile Glu Asn Ala Trp Gly Ile Arg Ile Tyr Gln
      210                 215                   220
Lys Arg Thr Gln Pro Thr Val Arg Ser His Ala Cys Glu Val Asp Pro
225                 230                   235                   240
Tyr Gly Met Pro Gly Gly Cys Ser His Ile Cys Leu Leu Ser Ser Ser
              245                 250                   255
Tyr Thr Lys
    259
```

```
<210> 968
<211> 161
<212> Amino acid
<213> Homo sapiens
```

```
<400> 968
Ser Ser Gly Asn Pro Gln Pro Gly Asp Ser Ser Gly Gly Gly Ala Gly
1               5                   10                    15
Gly Gly Leu Pro Ser Pro Gly Glu Gln Glu Leu Ser Arg Arg Leu Gln
          20                  25                    30
Arg Leu Tyr Pro Ala Val Asn Gln Gln Glu Thr Pro Leu Pro Arg Ser
      35                  40                    45
Trp Ser Pro Lys Asp Lys Tyr Asn Tyr Ile Gly Leu Ser Gln Gly Asn
    50                  55                    60
Leu Arg Val His Tyr Lys Gly His Gly Lys Asn His Lys Asp Ala Ala
  65                  70                    75                  80
Ser Val Arg Ala Thr His Pro Ile Pro Ala Ala Cys Gly Ile Tyr Tyr
              85                  90                    95
Phe Glu Val Lys Ile Val Ser Lys Gly Arg Asp Gly Tyr Met Gly Ile
          100                 105                   110
Gly Leu Ser Ala Gln Gly Val Asn Met Asn Arg Leu Pro Gly Trp Asp
          115                 120                   125
Lys His Ser Tyr Gly Tyr His Gly Asp Asp Gly His Ser Phe Cys Ser
      130                 135                   140
Ser Gly Thr Gly Gln Pro Tyr Gly Pro Thr Phe Thr Thr Gly Asp Val
145                 150                   155                   160
Ile
```

161

```
<210> 969
<211> 76
<212>Amino acid
<213> Homo sapiens
```

```
<400> 969
Phe Phe Phe Phe Lys Met Gly Ser Arg Ser Val Thr Gln Ala Gly Val
1               5               10              15
Gln Trp Cys Asp Val Ser Ser Leu Gln Ala Pro Pro Pro Arg Phe Thr
            20              25              30
Leu Phe Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr Arg Cys Val Pro
        35              40              45
Pro Cys Pro Ala Asn Phe Phe Val Phe Leu Val Glu Thr Gly Phe His
    50              55              60
Arg Val Ser Gln Tyr Gly Leu Asp Leu Leu Thr Ser
65              70              75  76
```

```
<210> 970
<211> 267
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(267)
<223> X = any amino acid or stop code
```

```
<400> 970
Gln Leu Ser Leu Ala Arg Gly Lys Val Phe Leu Cys Ala Leu Ser Phe
1               5               10              15
Val Tyr Phe Ala Lys Ala Leu Ala Glu Gly Tyr Leu Lys Ser Thr Ile
            20              25              30
Thr Gln Ile Glu Arg Arg Val Asp Ile Pro Ser Ser Leu Val Gly Val
        35              40              45
Ile Asp Gly Ser Phe Glu Ile Gly Asn Leu Leu Val Ile Thr Phe Val
    50              55              60
Ser Tyr Phe Gly Ala Lys Leu His Arg Pro Lys Ile Ile Gly Ala Gly
65              70              75              80
Cys Val Ile Met Gly Val Gly Thr Leu Leu Ile Ala Met Pro Gln Phe
                85              90              95
Phe Met Glu Gln Tyr Lys Tyr Glu Arg Tyr Ser Pro Ser Ser Asn Ser
            100             105             110
Thr Leu Ser Ile Ser Pro Cys Leu Leu Glu Ser Ser Ser Gln Leu Pro
        115             120             125
Val Ser Val Met Glu Lys Ser Lys Ser Lys Ile Ser Asn Glu Cys Glu
    130             135             140
Val Asp Thr Ser Ser Ser Met Trp Ile Tyr Val Phe Leu Gly Asn Leu
145             150             155             160
Leu Arg Gly Ile Gly Glu Thr Pro Ile Gln Pro Leu Gly Ile Ala Tyr
            165             170             175
Leu Asp Asp Phe Ala Ser Glu Asp Asn Ala Ala Phe Tyr Ile Gly Cys
        180             185             190
```

534

```
Val Gln Thr Val Ala Ile Ile Gly Pro Ile Phe Gly Phe Leu Leu Gly
        195                 200                 205
Ser Leu Cys Ala Lys Leu Tyr Val Asp Ile Gly Phe Val Asn Leu Asp
    210                 215                 220
His Phe Xaa Val Ser Ala Gln Leu Gly Thr Arg Lys Gly Val Leu Val
225                 230                 235                 240
Cys Leu Val Phe Cys Leu Leu Cys Gln Ser Ile Gly Arg Arg Leu Ser
                245                 250                 255
Glu Glu His His His Ser Asp Arg Glu Lys Gly
                260                 265 267
```

```
<210> 971
<211> 282
<212> Amino acid
<213> Homo sapiens
```

```
<400> 971
Gln Pro Ala Gly Arg Val Glu Ala Phe Cys Lys Phe His Met Trp Ala
  1           5                 10                  15
Glu Gly Met Thr Ser Leu Met Lys Ala Ala Leu Asp Leu Thr Tyr Pro
            20                  25                  30
Ile Thr Ser Met Phe Ser Gly Ala Gly Phe Asn Ser Ser Ile Phe Ser
            35                  40                  45
Val Phe Lys Asp Gln Gln Ile Glu Asp Leu Trp Ile Pro Tyr Phe Ala
    50                  55                  60
Ile Thr Thr Asp Ile Thr Ala Ser Ala Met Arg Val His Thr Asp Gly
65                  70                  75                  80
Ser Leu Trp Arg Tyr Val Arg Ala Ser Met Ser Leu Ser Gly Tyr Met
            85                  90                  95
Pro Pro Leu Cys Asp Pro Lys Asp Gly His Leu Leu Met Asp Gly Gly
            100                 105                 110
Tyr Ile Asn Asn Leu Pro Ala Asp Val Ala Arg Ser Met Gly Ala Lys
        115                 120                 125
Val Val Ile Ala Ile Asp Val Gly Ser Arg Asp Glu Thr Asp Leu Thr
    130                 135                 140
Asn Tyr Gly Asp Ala Leu Ser Gly Trp Trp Leu Leu Trp Lys Arg Trp
145                 150                 155                 160
Asn Pro Leu Ala Thr Lys Val Lys Val Leu Asn Met Ala Glu Ile Gln
                165                 170                 175
Thr Arg Leu Ala Tyr Val Cys Cys Val Arg Gln Leu Glu Val Val Lys
            180                 185                 190
Ser Ser Asp Tyr Cys Glu Tyr Leu Arg Pro Pro Ile Asp Ser Tyr Ser
    195                 200                 205
Thr Leu Asp Phe Gly Lys Phe Asn Glu Ile Cys Glu Val Gly Tyr Gln
    210                 215                 220
His Gly Arg Thr Val Phe Asp Ile Trp Gly Arg Ser Gly Val Leu Glu
225                 230                 235                 240
Lys Met Leu Arg Asp Gln Gln Gly Pro Ser Lys Lys Pro Ala Ser Ala
                245                 250                 255
Val Leu Thr Cys Pro Asn Ala Ser Phe Thr Asp Leu Ala Glu Ile Val
                260                 265                 270
Ser Arg Ile Glu Pro Ala Lys Pro Ala Met
    275                 280     282
```

```
<210> 972
<211> 167
<212> Amino acid
<213> Homo sapiens
```

535

```
<400> 972
Leu Trp Val Ile Met Phe Val Ser Tyr Leu Ile Leu Thr Leu Leu His
1               5                   10                  15
Val Gln Thr Ala Val Leu Ala Arg Pro Gly Gly Glu Ser Ile Gly Cys
            20                  25                  30
Asp Asp Tyr Leu Gly Ser Asp Lys Val Val Asp Lys Cys Gly Val Cys
        35                  40                  45
Gly Gly Asp Asn Thr Gly Cys Gln Val Val Ser Gly Val Phe Lys His
    50                  55                  60
Ala Leu Thr Ser Leu Gly Tyr His Arg Val Val Glu Ile Pro Glu Gly
65                  70                  75                  80
Ala Thr Lys Ile Asn Ile Thr Glu Met Tyr Lys Ser Asn Asn Tyr Leu
                85                  90                  95
Ala Leu Arg Ser Arg Ser Gly Arg Ser Ile Ile Asn Gly Asn Trp Ala
            100                 105                 110
Ile Asp Arg Pro Gly Lys Tyr Glu Gly Gly Gly Thr Met Phe Thr Tyr
        115                 120                 125
Lys Arg Pro Asn Glu Ile Ser Ser Thr Ala Gly Glu Ser Phe Leu Ala
    130                 135                 140
Glu Gly Pro Thr Asn Glu Ile Leu Asp Val Tyr Val Ser Leu Asp Val
145                 150                 155                 160
Ser Gly Leu Phe Phe Gly Phe
                165     167


<210> 973
<211> 140
<212>Amino acid
<213> Homo sapiens


<400> 973
Ile Ser Gly Gly Thr Arg Ser Ala Gly Pro Leu Arg Arg Asn Tyr Asn
1               5                   10                  15
Phe Ile Ala Ala Val Val Glu Lys Val Ala Pro Ser Val Val His Val
            20                  25                  30
Gln Leu Trp Gly Arg Asn Gln Gln Trp Ile Glu Val Val Leu Gln Asn
        35                  40                  45
Gly Ala Arg Tyr Glu Ala Val Val Lys Asp Ile Asp Leu Lys Leu Asp
    50                  55                  60
Leu Ala Val Ile Lys Ile Glu Ser Asn Ala Glu Leu Pro Val Leu Met
65                  70                  75                  80
Leu Gly Arg Ser Ser Asp Leu Arg Ala Gly Glu Phe Val Val Ala Leu
                85                  90                  95
Gly Ser Pro Phe Ser Leu Gln Asn Thr Ala Thr Ala Gly Ile Val Ser
            100                 105                 110
Thr Lys Gln Arg Gly Gly Lys Glu Leu Gly Met Lys Asp Ser Asp Met
        115                 120                 125
Asp Tyr Val Gln Ile Asp Ala Thr Ile Asn Tyr Gly
    130                 135                 140


<210> 974
<211> 286
<212>Amino acid
<213> Homo sapiens
```

<400> 974

```
Pro Arg Val Arg Glu Leu Lys Glu Ile Leu Asp Arg Lys Gly His Phe
 1           5                   10                  15
Ser Glu Asn Glu Thr Arg Trp Ile Ile Gln Ser Leu Ala Ser Ala Ile
            20                  25                  30
Ala Tyr Leu His Asn Asn Asp Ile Val His Arg Asp Leu Lys Leu Glu
        35                  40                  45
Asn Ile Met Val Lys Ser Ser Leu Ile Asp Asp Asn Asn Glu Ile Asn
        50                  55                  60
Leu Asn Ile Lys Val Thr Asp Phe Gly Leu Ala Val Lys Lys Gln Ser
65                  70                  75                  80
Arg Ser Glu Ala Met Leu Gln Ala Thr Cys Gly Thr Pro Ile Tyr Met
                85                  90                  95
Ala Pro Glu Val Ile Ser Ala His Asp Tyr Ser Gln Gln Cys Asp Ile
            100                 105                 110
Trp Ser Ile Gly Val Val Met Tyr Met Leu Leu Arg Gly Glu Pro Pro
        115                 120                 125
Phe Leu Ala Ser Ser Glu Glu Lys Leu Phe Glu Leu Ile Arg Lys Gly
        130                 135                 140
Glu Leu His Phe Glu Asn Ala Val Trp Asn Ser Ile Ser Asp Cys Ala
145                 150                 155                 160
Lys Ser Val Leu Lys Gln Leu Met Lys Val Asp Pro Ala His Arg Ile
                165                 170                 175
Thr Ala Lys Glu Leu Leu Asp Asn Gln Trp Leu Thr Gly Asn Lys Leu
            180                 185                 190
Ser Ser Val Arg Pro Thr Asn Val Leu Glu Met Met Lys Glu Trp Lys
            195                 200                 205
Asn Asn Pro Glu Ser Val Glu Glu Asn Thr Thr Glu Glu Lys Asn Lys
210                 215                 220
Pro Ser Thr Glu Glu Lys Leu Lys Ser Tyr Gln Pro Trp Gly Asn Val
225                 230                 235                 240
Pro Glu Thr Asn Tyr Thr Ser Asp Glu Glu Glu Lys Gln Val Gly
            245                 250                 255
Arg Ile Ile Ala Ala Phe Leu Pro Ser Val Lys Tyr Pro His His Thr
        260                 265                 270
Trp Asn Ile Phe Leu Gln Ile Cys Leu Phe Val Val Ser Leu
        275                 280             285 286
```

<210> 975
<211> 155
<212> Amino acid
<213> Homo sapiens

<400> 975

```
Leu Ser Ile Ser Val Ser Asp Val Ser Leu Ser Asp Glu Gly Gln Tyr
 1           5                   10                  15
Thr Cys Ser Leu Phe Thr Met Pro Val Lys Thr Ser Lys Ala Tyr Leu
            20                  25                  30
Thr Val Leu Gly Val Pro Glu Lys Pro Gln Ile Ser Gly Phe Ser Ser
        35                  40                  45
Pro Val Met Glu Gly Asp Leu Met Gln Leu Thr Cys Lys Thr Ser Gly
    50                  55                  60
Ser Lys Pro Ala Ala Asp Ile Arg Trp Phe Lys Asn Asp Lys Glu Ile
65                  70                  75                  80
```

```
Lys Asp Val Lys Tyr Leu Lys Glu Glu Asp Ala Asn Arg Lys Thr Phe
              85                  90                  95
Thr Val Ser Ser Thr Leu Asp Phe Arg Val Asp Arg Ser Asp Asp Gly
          100                 105                 110
Val Ala Val Ile Cys Arg Val Asp His Glu Ser Leu Asn Ala Thr Pro
          115                 120                 125
Gln Val Ala Met Gln Val Leu Glu Met His Tyr Thr Pro Ser Val Lys
      130                 135                 140
Ile Ile Pro Ser Thr Pro Phe Pro Gln Glu Gly
145                 150                 155
```

```
<210> 976
<211> 137
<212>Amino acid
<213> Homo sapiens
```

```
<400> 976
Tyr Asn Gln Lys Val Asp Leu Phe Ser Leu Gly Ile Ile Phe Phe Glu
1               5                   10                  15
Met Ser Tyr His Pro Met Val Thr Ala Ser Glu Arg Ile Phe Val Leu
              20                  25                  30
Asn Gln Leu Arg Asp Pro Thr Ser Pro Lys Phe Pro Glu Asp Phe Asp
          35                  40                  45
Asp Gly Glu His Ala Lys Gln Lys Ser Val Ile Ser Trp Leu Leu Asn
      50                  55                  60
His Asp Pro Ala Lys Arg Pro Thr Ala Thr Glu Leu Leu Lys Ser Glu
65                  70                  75                  80
Leu Leu Pro Pro Pro Gln Met Glu Glu Ser Glu Leu His Glu Val Leu
              85                  90                  95
His His Thr Leu Thr Asn Val Asp Gly Lys Ala Tyr Arg Thr Ile Asp
          100                 105                 110
Gly Pro Arg Ser Phe Arg Gln Arg Ile Ser Pro Ala Ile Ala Tyr Thr
          115                 120                 125
Tyr Asp Ser Asp Ile Leu Lys Gly Asn
      130                 135     137
```

```
<210> 977
<211> 246
<212>Amino acid
<213> Homo sapiens
```

```
<400> 977
Asp Gln Asp Tyr Lys Tyr Asp Ser Thr Ser Asp Asp Ser Asn Phe Leu
1               5                   10                  15
Asn Pro Pro Arg Gly Trp Asp His Thr Ala Pro Gly His Arg Thr Phe
              20                  25                  30
Glu Thr Lys Asp Gln Pro Glu Tyr Asp Ser Thr Asp Gly Glu Gly Asp
          35                  40                  45
Trp Ser Leu Trp Ser Val Cys Ser Val Thr Cys Gly Asn Gly Asn Gln
      50                  55                  60
Lys Arg Thr Arg Ser Cys Gly Tyr Ala Cys Thr Ala Thr Glu Ser Arg
65                  70                  75                  80
Thr Cys Asp Arg Pro Asn Cys Pro Gly Ile Glu Asp Thr Phe Arg Thr
              85                  90                  95
```

```
Ala Ala Thr Glu Val Ser Leu Leu Ala Gly Ser Glu Glu Phe Asn Ala
            100                     105                 110
Thr Lys Leu Phe Glu Val Asp Thr Asp Ser Cys Glu Arg Trp Met Ser
        115                 120                 125
Cys Lys Ser Glu Phe Leu Lys Lys Tyr Met His Lys Val Met Asn Asp
    130                 135                 140
Leu Pro Ser Cys Pro Cys Ser Tyr Pro Thr Glu Val Ala Tyr Ser Thr
145                 150                 155                 160
Ala Asp Ile Phe Asp Arg Ile Lys Arg Lys Asp Phe Arg Trp Lys Asp
                165                 170                 175
Ala Ser Gly Pro Lys Glu Lys Leu Glu Ile Tyr Lys Pro Thr Ala Arg
            180                 185                 190
Tyr Cys Ile Arg Ser Met Leu Ser Leu Glu Ser Thr Thr Leu Ala Ala
        195                 200                 205
Gln His Cys Cys Tyr Gly Asp Asn Met Gln Leu Ile Thr Arg Gly Lys
    210                 215                 220
Gly Ala Gly Thr Pro Asn Leu Ile Ser Thr Glu Phe Ser Ala Glu Leu
225                 230                 235                 240
His Tyr Lys Val Asp Val
                245 246
```

```
        <210> 978
        <211> 203
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 978
Glu Ser Glu Glu Asn Gly Glu Ser Ala Met Asp Ser Thr Val Ala Lys
1                   5                   10                  15
Glu Gly Thr Asn Val Pro Leu Val Ala Ala Gly Pro Cys Asp Asp Glu
            20                  25                  30
Gly Ile Val Thr Ser Thr Gly Ala Lys Glu Glu Asp Glu Glu Gly Glu
        35                  40                  45
Asp Val Val Thr Ser Thr Gly Arg Gly Asn Glu Ile Gly His Ala Ser
    50                  55                  60
Thr Cys Thr Gly Leu Gly Glu Glu Ser Glu Gly Val Leu Ile Cys Glu
65                  70                  75                  80
Ser Ala Glu Gly Asp Ser Gln Ile Gly Thr Val Val Glu His Val Glu
            85                  90                  95
Ala Glu Ala Gly Ala Ala Ile Met Asn Ala Asn Glu Asn Asn Val Asp
            100                 105                 110
Ser Met Ser Gly Thr Glu Lys Gly Ser Lys Asp Thr Asp Ile Cys Ser
        115                 120                 125
Ser Ala Lys Gly Ile Val Glu Ser Ser Val Thr Ser Ala Val Ser Gly
    130                 135                 140
Lys Asp Glu Val Thr Pro Val Pro Gly Gly Cys Glu Gly Pro Met Thr
145                 150                 155                 160
Ser Ala Ala Ser Asp Gln Ser Asp Ser Gln Leu Glu Lys Val Glu Asp
                165                 170                 175
Thr Thr Ile Ser Thr Gly Leu Val Gly Gly Ser Tyr Asp Val Leu Val
            180                 185                 190
Ser Gly Glu Val Pro Glu Cys Glu Val Ala His
        195                 200         203
```

```
        <210> 979
        <211> 94
        <212>Amino acid
        <213> Homo sapiens
```

<400> 979

Val	Cys	Ile	Ile	Cys	Leu	Ile	Phe	Ser	Tyr	Tyr	Ser	Phe	Asp	Ser	Ala
1				5					10					15	

| Leu | Gln | Ser | Ala | Lys | Ser | Ser | Leu | Gly | Gly | Asn | Asp | Glu | Leu | Ser | Ala |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| Thr | Phe | Leu | Glu | Met | Lys | Gly | His | Phe | Tyr | Met | Tyr | Ala | Gly | Ser | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| Leu | Leu | Lys | Met | Gly | Gln | His | Gly | Asn | Asn | Val | Gln | Trp | Arg | Ala | Leu |
| | | 50 | | | | 55 | | | | | 60 | | | | |

| Ser | Glu | Leu | Ala | Ala | Leu | Cys | Tyr | Leu | Ile | Ala | Phe | Gln | Val | Ser | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| Pro | Leu | Gly | Ala | Ile | Asp | Ile | Ser | Arg | Ser | Leu | Asp | Val | Phe |
| | | | | 85 | | | | | 90 | | | | 94 |

<210> 980
<211> 226
<212>Amino acid
<213> Homo sapiens

<400> 980

Gln	His	Pro	Ser	Gln	Glu	Lys	Pro	Gln	Val	Leu	Thr	Pro	Ser	Pro	Arg
1				5					10					15	

| Lys | Gln | Lys | Leu | Asn | Arg | Lys | Tyr | Arg | Ser | His | His | Asp | Gln | Met | Ile |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| Cys | Lys | Cys | Leu | Ser | Leu | Ser | Ile | Ser | Tyr | Ser | Ala | Thr | Ile | Gly | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |

| Leu | Thr | Thr | Ile | Ile | Gly | Thr | Ser | Thr | Ser | Leu | Ile | Phe | Leu | Glu | His |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| Phe | Asn | Asn | Gln | Tyr | Pro | Ala | Ser | Glu | Val | Val | Asn | Phe | Gly | Thr | Trp |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| Phe | Leu | Phe | Ser | Phe | Pro | Ile | Ser | Leu | Ile | Met | Leu | Val | Val | Ser | Trp |
| | | | 85 | | | | | 90 | | | | | 95 | | |

| Phe | Trp | Met | His | Trp | Leu | Phe | Leu | Gly | Cys | Asn | Phe | Lys | Glu | Thr | Cys |
| | | | 100 | | | | | 105 | | | | | 110 | | |

| Ser | Leu | Ser | Lys | Lys | Lys | Lys | Thr | Lys | Arg | Glu | Gln | Leu | Ser | Glu | Lys |
| | | 115 | | | | | 120 | | | | | 125 | | | |

| Arg | Ile | Gln | Glu | Glu | Tyr | Glu | Lys | Leu | Gly | Asp | Ile | Ser | Tyr | Pro | Glu |
| | 130 | | | | | 135 | | | | | 140 | | | | |

| Met | Val | Thr | Gly | Phe | Phe | Phe | Ile | Leu | Met | Thr | Val | Leu | Trp | Phe | Thr |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |

| Arg | Glu | Pro | Gly | Phe | Val | Pro | Gly | Trp | Asp | Ser | Phe | Phe | Glu | Lys | Lys |
| | | | | 165 | | | | | 170 | | | | | 175 | |

| Gly | Tyr | Arg | Thr | Asp | Ala | Thr | Val | Ser | Val | Phe | Leu | Gly | Phe | Leu | Leu |
| | | | 180 | | | | | 185 | | | | | 190 | | |

| Phe | Leu | Ile | Pro | Ala | Lys | Lys | Pro | Cys | Phe | Gly | Lys | Lys | Asn | Asp | Gly |
| | | 195 | | | | | 200 | | | | | 205 | | | |

| Glu | Asn | Gln | Glu | His | Ser | Leu | Gly | Thr | Glu | Pro | Ile | Ile | Thr | Trp | Lys |
| | 210 | | | | | 215 | | | | | 220 | | | | |

| Asp | Phe |
| 225 | 226 |

<210> 981
<211> 163

```
        <212>Amino acid
        <213> Homo sapiens




        <400> 981
Leu Glu Arg Glu Gly Asp Lys Gly Thr Pro Val Leu Arg Gly Phe Ser
1                   5                   10                  15
Ser Val Ser Gly Ser Trp Ser Arg Arg Met Pro Pro Phe Leu Leu Leu
            20                  25                  30
Thr Cys Leu Phe Ile Thr Gly Thr Ser Val Ser Pro Val Ala Leu Asp
        35                  40                  45
Pro Cys Ser Ala Tyr Ile Ser Leu Asn Glu Pro Trp Arg Asn Thr Asp
    50                  55                  60
His Gln Leu Asp Glu Ser Gln Gly Pro Pro Leu Cys Asp Asn His Val
65                  70                  75                  80
Asn Gly Glu Trp Tyr His Phe Thr Gly Met Ala Gly Asp Ala Met Pro
                85                  90                  95
Thr Phe Cys Ile Pro Glu Asn His Cys Gly Thr His Ala Pro Val Trp
            100                 105                 110
Leu Asn Gly Ser His Pro Leu Glu Gly Asp Gly Ile Val Gln Arg Gln
        115                 120                 125
Ala Cys Ala Ser Phe Asn Gly Asn Cys Cys Leu Trp Asn Thr Thr Val
130                 135                 140
Glu Val Lys Ala Cys Pro Gly Gly Tyr Tyr Val Tyr Arg Leu Thr Lys
145                 150                 155                 160
Pro Ser Val
        163




        <210> 982
        <211> 327
        <212>Amino acid
        <213> Homo sapiens




        <400> 982
Cys Gly Arg Thr Met Ser Asp Ile Arg His Ser Leu Leu Arg Arg Asp
1                   5                   10                  15
Ala Leu Ser Ala Ala Lys Glu Val Leu Tyr His Leu Asp Ile Tyr Phe
            20                  25                  30
Ser Ser Gln Leu Gln Ser Ala Pro Leu Pro Ile Val Asp Lys Gly Pro
        35                  40                  45
Val Glu Leu Leu Glu Glu Phe Val Phe Gln Val Pro Lys Glu Arg Ser
    50                  55                  60
Ala Gln Pro Lys Arg Leu Asn Ser Leu Gln Glu Leu Gln Leu Leu Glu
65                  70                  75                  80
Ile Met Cys Asn Tyr Phe Gln Glu Gln Thr Lys Asp Ser Val Arg Gln
                85                  90                  95
Ile Ile Phe Ser Ser Leu Phe Ser Pro Gln Gly Asn Lys Ala Asp Asp
            100                 105                 110
Ser Arg Met Ser Leu Leu Gly Lys Leu Val Ser Met Ala Val Ala Val
        115                 120                 125
Cys Arg Ile Pro Val Leu Glu Cys Ala Ala Ser Trp Leu Gln Arg Thr
130                 135                 140
Pro Val Val Tyr Cys Val Arg Leu Ala Lys Ala Leu Val Asp Asp Tyr
145                 150                 155                 160
Cys Cys Leu Val Pro Gly Ser Ile Gln Thr Leu Lys Gln Ile Phe Ser
            165                 170                 175
```

```
Ala Ser Pro Arg Phe Cys Cys Gln Phe Ile Thr Ser Val Thr Ala Leu
        180             185             190
Tyr Asp Leu Ser Ser Asp Asp Leu Ile Pro Pro Met Asp Leu Leu Glu
        195             200             205
Met Ile Val Thr Trp Ile Phe Glu Asp Pro Arg Leu Ile Leu Ile Thr
    210             215             220
Phe Leu Asn Thr Pro Ile Ala Ala Asn Leu Pro Ile Gly Phe Leu Glu
225             230             235             240
Leu Thr Pro Leu Val Gly Leu Ile Arg Trp Cys Val Lys Ala Pro Leu
            245             250             255
Ala Tyr Lys Arg Lys Lys Lys Pro Pro Leu Ser Asn Gly His Val Ser
        260             265             270
Asn Lys Val Thr Lys Asp Pro Gly Val Gly Met Asp Arg Asp Ser His
        275             280             285
Leu Leu Tyr Ser Lys Leu His Leu Ser Val Leu Gln Val Leu Met Thr
        290             295             300
Leu Gln Leu His Leu Thr Glu Lys Asn Leu Tyr Gly Pro Pro Gly Ala
305             310             315             320
Asp Pro Leu Arg Pro His Gly
            325     327
```

```
<210> 983
<211> 110
<212>Amino acid
<213> Homo sapiens
```

```
<400> 983
Ser Ala Cys Ser Thr Gly Pro Glu Leu Pro Gly Arg Ala Thr Arg Ser
1               5               10              15
Leu Thr Arg Pro Ala Asn Gln Lys Gly Cys Asp Gly Asp Arg Leu Tyr
        20              25              30
Tyr Asp Gly Cys Ala Met Ile Ala Met Asn Gly Ser Val Phe Ala Gln
        35              40              45
Gly Ser Gln Phe Ser Leu Asp Asp Val Glu Val Leu Thr Ala Thr Leu
    50              55              60
Asp Leu Glu Asp Val Arg Ser Tyr Arg Ala Glu Ile Ser Ser Arg Asn
65              70              75              80
Leu Ala Val Ser Ala Pro Val Asp Thr Cys Val Gly Cys Ser Ser Lys
            85              90              95
Thr Trp Lys Val Ala Pro Phe Val Arg Ala Trp Trp Arg Pro
            100             105             110
```

```
<210> 984
<211> 80
<212>Amino acid
<213> Homo sapiens
```

```
<400> 984
Ala Pro Leu Ser Arg Leu Cys Phe Pro Gln Val Leu Val Asn Glu Gly
1               5               10              15
Gly Gly Phe Asp Arg Ala Ser Gly Ser Phe Val Ala Pro Val Arg Gly
        20              25              30
Val Tyr Ser Phe Arg Phe His Val Val Lys Val Tyr Asn Arg Gln Thr
        35              40              45
```

```
Val Gln Val Thr Ser Ala Leu Ala Pro Ile Pro Gly Ser Gly Gly Trp
    50                      55              60
Gly Gly Gly Arg Arg Gly Ala Gln Leu Thr Ser Gly Trp Thr Leu His
65              70              75                      80
```

```
<210> 985
<211> 235
<212>Amino acid
<213> Homo sapiens
```

```
<400> 985
Pro His Ile Ile Gly Ala Glu Asp Asp Asp Phe Gly Thr Glu His Glu
1               5               10                      15
Gln Ile Asn Gly Gln Cys Ser Cys Phe Gln Ser Ile Glu Leu Leu Lys
            20              25              30
Ser Arg Pro Ala His Leu Ala Val Phe Leu Arg His Val Val Ser Gln
        35              40              45
Phe Asp Pro Ala Thr Leu Leu Cys Tyr Leu Tyr Ser Asp Leu Tyr Lys
    50              55              60
His Thr Asn Ser Lys Glu Thr Arg Arg Ile Phe Leu Glu Phe His Gln
65              70              75                      80
Phe Phe Leu Asp Arg Ser Ala His Leu Lys Val Ser Val Pro Asp Glu
            85              90                      95
Met Ser Ala Asp Leu Glu Lys Arg Arg Pro Glu Leu Ile Pro Glu Asp
            100             105             110
Leu His Arg His Tyr Ile Gln Thr Met Gln Glu Arg Val His Pro Glu
        115             120             125
Val Gln Arg His Leu Glu Asp Phe Arg Gln Lys Arg Ser Met Gly Leu
    130             135             140
Thr Leu Ala Glu Ser Glu Leu Thr Lys Leu Asp Ala Glu Arg Asp Lys
145             150             155             160
Asp Arg Leu Thr Leu Glu Lys Glu Arg Thr Cys Ala Glu Gln Ile Val
            165             170             175
Ala Lys Ile Glu Glu Val Leu Met Thr Ala Gln Ala Val Glu Glu Asp
            180             185             190
Lys Ser Ser Thr Met Gln Tyr Val Ile Leu Met Tyr Met Lys His Leu
        195             200             205
Gly Val Lys Val Lys Glu Pro Arg Asn Leu Glu His Lys Arg Gly Arg
    210             215             220
Ile Gly Phe Leu Pro Lys Ile Lys Gln Ser Met
225             230             235
```

```
<210> 986
<211> 140
<212>Amino acid
<213> Homo sapiens
```

```
<400> 986
Ser Pro Gly Thr Gly Arg Gly Pro Gly Pro Thr Ser Phe Val Cys Leu
1               5               10                      15
Pro Thr Pro Gln Cys Pro Phe Ile Asp Asp Phe Ile Leu Ala Leu His
            20              25              30
```

543

Arg Lys Ile Lys Asn Glu Pro Val Val Phe Pro Glu Gly Pro Glu Ile
        35   40   45
Ser Glu Glu Leu Lys Asp Leu Ile Leu Lys Met Leu Asp Lys Asn Pro
    50   55   60
Glu Thr Arg Ile Gly Val Pro Asp Ile Lys Leu His Pro Trp Val Thr
65   70   75   80
Lys Asn Gly Glu Glu Pro Leu Pro Ser Glu Glu His Cys Ser Val
                85   90   95
Val Glu Val Thr Glu Glu Glu Val Lys Asn Ser Val Arg Leu Ile Pro
            100   105   110
Ser Trp Thr Thr Val Ile Leu Val Lys Ser Met Leu Arg Lys Arg Ser
        115   120   125
Phe Gly Asn Pro Phe Glu Pro Gln Ala Arg Met Ala
    130   135   140

        <210> 987
        <211> 242
        <212>Amino acid
        <213> Homo sapiens

        <400> 987
His Ala Ser Gly Ile Lys Ile Asp Lys Thr Ser Asp Gly Pro Lys Leu
1   5   10   15
Phe Leu Thr Glu Glu Asp Gln Lys Lys Leu His Asp Phe Glu Glu Gln
            20   25   30
Cys Val Glu Met Tyr Phe Asn Glu Lys Asp Asp Lys Phe His Ser Gly
        35   40   45
Ser Glu Glu Arg Ile Arg Val Thr Phe Glu Arg Val Glu Gln Met Cys
    50   55   60
Ile Gln Ile Lys Glu Val Gly Asp Arg Val Asn Tyr Ile Lys Arg Ser
65   70   75   80
Leu Gln Ser Leu Asp Ser Gln Ile Gly His Leu Gln Asp Leu Ser Ala
                85   90   95
Leu Thr Val Asp Thr Leu Lys Thr Leu Thr Ala Gln Lys Ala Ser Glu
            100   105   110
Ala Ser Lys Val His Asn Glu Ile Thr Arg Glu Leu Ser Ile Ser Lys
        115   120   125
His Leu Ala Gln Asn Leu Ile Asp Asp Gly Pro Val Arg Pro Ser Val
        130   135   140
Trp Lys Lys His Gly Val Val Asn Thr Leu Ser Ser Ser Leu Pro Gln
145   150   155   160
Gly Asp Leu Glu Ser Asn Asn Pro Phe His Cys Asn Ile Leu Met Lys
                    165   170   175
Asp Asp Lys Asp Pro Gln Cys Asn Ile Phe Gly Gln Asp Leu Pro Ala
                180   185   190
Val Pro Gln Arg Lys Glu Phe Asn Phe Pro Glu Ala Gly Ser Ser Ser
            195   200   205
Gly Ala Leu Phe Pro Ser Ala Val Ser Pro Pro Glu Leu Arg Gln Arg
        210   215   220
Leu His Gly Val Glu Leu Leu Lys Ile Phe Asn Lys Lys Gln Lys Lys
225   230   235   240
Arg Ala
    242

        <210> 988
        <211> 154
        <212>Amino acid
        <213> Homo sapiens

<400> 988

```
Cys Cys Arg Trp Ile Asp Cys Phe Ala Leu Tyr Asp Gln Gln Glu Glu
1               5                   10                  15
Leu Val Arg His Ile Glu Lys Val His Ile Asp Gln Arg Lys Gly Glu
            20                  25                  30
Asp Phe Thr Cys Phe Trp Ala Gly Cys Pro Arg Arg Tyr Lys Pro Phe
            35                  40                  45
Asn Ala Arg Tyr Lys Leu Leu Ile His Met Arg Val His Ser Gly Glu
            50                  55                  60
Lys Pro Asn Lys Cys Thr Phe Glu Gly Cys Glu Lys Ala Phe Ser Arg
65                  70                  75                  80
Leu Glu Asn Leu Lys Ile His Leu Arg Ser His Thr Gly Glu Lys Pro
                85                  90                  95
Tyr Leu Cys Gln His Pro Gly Cys Gln Lys Ala Phe Ser Asn Ser Ser
                100                 105                 110
Asp Arg Ala Lys His Gln Arg Thr His Leu Asp Thr Lys Pro Tyr Ala
            115                 120                 125
Cys Gln Ile Pro Gly Cys Thr Lys Arg Tyr Thr Asp Pro Ser Ser Leu
130                 135                 140
Arg Lys His Val Lys Ala His Ser Ser Lys
145                 150             154
```

<210> 989
<211> 65
<212>Amino acid
<213> Homo sapiens

<400> 989

```
Leu Pro Leu Leu Trp Thr Leu Ser Asp Phe Gly Gly Thr Met Asp Gln
1               5                   10                  15
Ser Gly Met Glu Ile Pro Val Thr Leu Ile Ile Lys Ala Pro Asn Gln
            20                  25                  30
Lys Tyr Ser Asp Gln Thr Ile Ser Cys Phe Leu Asn Trp Thr Val Gly
            35                  40                  45
Lys Leu Lys Thr His Leu Ser Asn Val Tyr Pro Ser Lys Pro Val Ser
            50                  55                  60
Val
65
```

<210> 990
<211> 297
<212>Amino acid
<213> Homo sapiens

<400> 990

```
Ala Gly Thr Arg Met Cys Val Val Ala Ala Ala Glu Glu Leu Val Cys
1               5                   10                  15
Gly Ala Arg Gly Leu Trp Met Arg Arg Thr Arg Arg Pro Arg Phe Val
            20                  25                  30
```

```
Leu Met Asn Lys Met Asp Asp Leu Asn Leu His Tyr Arg Phe Leu Asn
        35              40                  45
Trp Arg Arg Arg Ile Arg Glu Ile Arg Glu Val Arg Ala Phe Arg Tyr
    50              55                  60
Gln Glu Arg Phe Lys His Ile Leu Val Asp Gly Asp Thr Leu Ser Tyr
65              70                  75                  80
His Gly Asn Ser Gly Glu Val Gly Cys Tyr Val Ala Ser Arg Pro Leu
            85                  90                  95
Thr Lys Asp Ser Asn Tyr Phe Glu Val Ser Ile Val Asp Ser Gly Val
            100                 105                 110
Arg Gly Thr Ile Ala Val Gly Leu Val Pro Gln Tyr Tyr Ser Leu Asp
        115                 120                 125
His Gln Pro Gly Trp Leu Pro Asp Ser Val Ala Tyr His Ala Asp Asp
    130                 135                 140
Gly Lys Leu Tyr Asn Gly Arg Ala Lys Gly Arg Gln Phe Gly Ser Lys
145                 150                 155                 160
Cys Asn Ser Gly Asp Arg Ile Gly Cys Gly Ile Glu Pro Val Ser Phe
            165                 170                 175
Asp Val Gln Thr Ala Gln Ile Phe Phe Thr Lys Asn Gly Lys Arg Val
            180                 185                 190
Gly Ser Thr Ile Met Pro Met Ser Pro Asp Gly Leu Phe Pro Ala Val
        195             200                 205
Gly Met His Ser Leu Gly Glu Glu Val Arg Leu His Leu Asn Ala Glu
    210             215                 220
Leu Gly Arg Glu Asp Asp Ser Val Met Met Val Asp Ser Tyr Glu Asp
225             230                 235                 240
Glu Trp Gly Arg Leu His Asp Val Arg Val Cys Gly Thr Leu Leu Glu
            245                 250                 255
Tyr Leu Gly Lys Gly Lys Ser Ile Val Asp Val Gly Leu Ala Gln Ala
        260             265                 270
Arg His Pro Leu Ser Thr Arg Ser His Tyr Phe Glu Val Glu Ile Val
    275             280                 285
Asp Pro Gly Glu Lys Cys Tyr Ile Ala
290                 295     297
```

```
<210> 991
<211> 207
<212>Amino acid
<213> Homo sapiens
```

```
<400> 991
Gln Gln Ala Glu Glu His Leu Ala Ala Tyr Ser Val Ser Asp Ser Asp
1               5                   10                  15
Ser Gly Lys Asp Pro Ser Met Glu Cys Cys Arg Arg Ala Thr Pro Gly
            20                  25                  30
Thr Leu Leu Leu Phe Leu Ala Phe Leu Leu Leu Ser Ser Arg Thr Ala
        35              40                  45
Arg Ser Glu Glu Asp Arg Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp
    50              55                  60
Ser Glu Cys Ser Arg Thr Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg
65              70                  75                  80
Arg Cys Leu Ser Ser Lys Ser Cys Glu Gly Arg Asn Ile Arg Tyr Arg
            85                  90                  95
Thr Cys Ser Asn Val Asp Cys Pro Pro Glu Ala Gly Asp Phe Arg Ala
            100                 105                 110
Gln Gln Cys Ser Ala His Asn Asp Val Lys His His Gly Gln Phe Tyr
        115                 120                 125
Glu Trp Leu Pro Val Ser Asn Asp Pro Asp Asn Pro Cys Ser Leu Lys
    130                 135                 140
```

Cys Gln Ala Lys Gly Thr Thr Leu Val Val Glu Leu Ala Pro Lys Val
145   150   155   160
Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp Met Cys Ile Ser
            165   170   175
Gly Leu Cys Gln Val Ser Ala Asp Leu Phe Ser Phe Asn Leu Ser Arg
            180   185   190
Gly Phe Gln Cys Leu Cys Val Asn Gly Leu His Ser Leu Thr Leu
        195   200   205   207

        <210> 992
        <211> 184
        <212>Amino acid
        <213> Homo sapiens

        <400> 992
Arg Leu Leu Arg Gln Glu Leu Val Val Leu Cys His Leu His His Pro
1   5   10   15
Ser Leu Ile Ser Leu Leu Ala Ala Gly Ile Arg Pro Arg Met Leu Val
            20   25   30
Met Glu Leu Ala Ser Lys Gly Ser Leu Asp Arg Leu Leu Gln Gln Asp
        35   40   45
Lys Ala Ser Leu Thr Arg Thr Leu Gln His Arg Ile Ala Leu His Val
    50   55   60
Ala Asp Gly Leu Arg Tyr Leu His Ser Ala Met Ile Ile Tyr Arg Asp
65   70   75   80
Leu Lys Pro His Asn Val Leu Leu Phe Thr Leu Tyr Pro Asn Ala Ala
                85   90   95
Ile Ile Ala Lys Ile Ala Asp Tyr Gly Ile Ala Gln Tyr Cys Cys Arg
            100   105   110
Met Gly Ile Lys Thr Ser Glu Gly Thr Pro Gly Phe Arg Ala Pro Glu
        115   120   125
Val Ala Arg Gly Asn Val Ile Tyr Asn Gln Gln Ala Asp Val Tyr Ser
    130   135   140
Phe Gly Leu Leu Leu Tyr Asp Ile Leu Thr Thr Gly Gly Arg Ile Val
145   150   155   160
Glu Gly Leu Lys Phe Pro Asn Glu Phe Asp Glu Leu Glu Ile Gln Gly
            165   170   175
Lys Leu Pro Asp Pro Val Lys Glu
            180   184

        <210> 993
        <211> 144
        <212>Amino acid
        <213> Homo sapiens

        <400> 993
Lys Ala Ser Asn Ser Thr His Glu Phe Arg Ile Gly Leu Pro Glu Gly
1   5   10   15
Trp Glu Ser Glu Lys Lys Ala Val Ile Pro Leu Gly Ile Gly Pro Pro
            20   25   30
Leu Thr Leu Ile Cys Leu Gly Val Leu Gly Gly Ile Leu Ile Tyr Gly
        35   40   45
Arg Lys Gly Phe Gln Thr Ala His Phe Tyr Leu Lys Asp Ser Pro Ser
    50   55   60

```
Pro Lys Val Ile Ser Thr Pro Pro Pro Pro Ile Phe Pro Ile Ser Lys
65                  70              75                  80
Glu Val Gly Pro Ile Pro Ile Lys His Phe Pro Lys His Val Ala Asn
                85              90                  95
Leu His Ala Ser Arg Gly Phe Thr Glu Lys Phe Glu Thr Leu Lys Lys
            100             105                 110
Phe Tyr Gln Glu Gly Gln Ser Cys Thr Val Asp Leu Gly Ile Thr Ala
        115                 120                 125
Asn Ser Ser Asn His Pro Asp Asn Arg His Arg Asn Arg Ser Leu Ile
    130                 135                 140             144
```

```
<210> 994
<211> 147
<212>Amino acid
<213> Homo sapiens
```

```
<400> 994
Ser Phe Pro Asp Arg Thr Ala Ser Leu Val Leu Leu Ser Val Pro Val
1               5                   10                  15
Gly Gln Ala Gly Met Gln Gln Arg Gly Leu Ala Ile Val Ala Leu Ala
            20              25                  30
Val Cys Ala Ala Leu His Ala Ser Pro Ala Ile Leu Pro Ile Ala Ser
        35              40                  45
Ser Cys Cys Thr Glu Val Ser His His Ile Ser Arg Arg Leu Leu Glu
    50                  55                  60
Arg Val Asn Met Cys Arg Ile Gln Arg Ala Asp Gly Asp Cys Asp Leu
65              70                  75                  80
Ala Ala Val Ile Leu His Val Lys Arg Arg Arg Ile Cys Val Ser Pro
            85                  90                  95
His Asn His Thr Val Lys Gln Trp Met Lys Val Gln Ala Ala Lys Lys
            100             105                 110
Asn Gly Lys Gly Asn Val Cys His Arg Lys Lys His His Gly Lys Arg
    115                 120                 125
Asn Ser Asn Arg Ala His Gln Gly Lys His Glu Thr Tyr Gly His Lys
    130                 135                 140
Thr Pro Tyr
145     147
```

```
<210> 995
<211> 245
<212>Amino acid
<213> Homo sapiens
```

```
<400> 995
Phe Glu Gln Pro Gly Asn Pro Gly Asp Pro Arg Val Arg Thr Pro Pro
1               5                   10                  15
Pro Trp Gly Pro His Phe Phe Ala Leu Ile Pro Ser Ser Pro Lys Glu
            20              25                  30
Val Pro Ala Thr Pro Ser Ser Arg Arg Asp Pro Ile Ala Pro Thr Ala
        35              40                  45
Thr Leu Leu Ser Lys Lys Thr Pro Ala Thr Leu Ala Pro Lys Glu Ala
    50              55                  60
```

```
Leu Ile Pro Pro Ala Met Thr Val Pro Ser Pro Lys Lys Thr Pro Ala
65              70              75              80
Ile Pro Thr Pro Lys Glu Ala Pro Ala Thr Pro Ser Ser Lys Glu Ala
            85              90              95
Ser Ser Pro Pro Ala Val Thr Pro Ser Thr Tyr Lys Gly Ala Pro Ser
            100             105             110
Pro Lys Glu Leu Leu Ile Pro Pro Ala Val Thr Ser Pro Ser Pro Lys
        115             120             125
Glu Ala Pro Thr Pro Pro Ala Val Thr Pro Pro Ser Pro Glu Lys Gly
    130             135             140
Pro Ala Thr Pro Ala Pro Lys Gly Thr Pro Thr Ser Pro Pro Val Thr
145             150             155             160
Pro Ser Ser Leu Lys Asp Ser Pro Thr Ser Pro Ala Ser Val Thr Cys
            165             170             175
Lys Met Gly Ala Thr Val Pro Gln Ala Ser Lys Gly Leu Pro Ala Lys
            180             185             190
Lys Gly Pro Thr Ala Leu Lys Glu Val Leu Val Ala Pro Ala Pro Glu
        195             200             205
Ser Thr Pro Ile Ile Thr Ala Pro Thr Arg Lys Gly Pro Gln Thr Lys
    210             215             220
Lys Ser Ser Ala Thr Ser Pro Pro Ile Cys Pro Asp Pro Ser Ala Lys
225             230             235             240
Asn Gly Ser Lys Gly
            245
```

```
<210> 996
<211> 25
<212> Amino acid
<213> Homo sapiens
```

```
<400> 996
Phe Phe Leu Lys Ile Gln Gly Leu Gly Trp Ala Arg Trp Leu Thr Pro
1               5               10              15
Val Ile Pro Val Leu Trp Glu Ala Glu
            20              25
```

```
<210> 997
<211> 56
<212> Amino acid
<213> Homo sapiens
```

```
<400> 997
Ala Gly Phe Gly Tyr Gly Leu Pro Ile Ser Arg Leu Tyr Ala Lys Tyr
1               5               10              15
Phe Gln Gly Asp Leu Asn Leu Tyr Ser Leu Ser Gly Tyr Gly Thr Asp
            20              25              30
Ala Ile Ile Tyr Leu Lys Val Ser Leu Glu Phe Asn Ser Lys Ile Leu
        35              40              45
Phe Leu Lys Pro Leu Leu Leu Leu
    50              55  56
```

```
<210> 998
<211> 198
```

<212>Amino acid
<213> Homo sapiens

<400> 998
Trp Met Arg Ala Pro Met Leu Gln Lys Gln Gln Ala Pro Arg Met Asp
1   5   10   15
Thr Pro Pro Pro Glu Glu Arg Leu Glu Lys Gln Asn Glu Lys Leu Asn
            20   25   30
Asn Gln Glu Glu Glu Thr Glu Phe Lys Glu Leu Asp Gly Leu Arg Glu
        35   40   45
Ala Leu Ala Asn Leu Arg Gly Leu Ser Glu Glu Glu Arg Ser Glu Lys
        50   55   60
Ala Met Leu Arg Ser Arg Ile Glu Glu Gln Ser Gln Leu Ile Cys Ile
65   70   75   80
Leu Lys Arg Arg Ser Asp Glu Ala Leu Glu Arg Cys Gln Ile Leu Glu
                85   90   95
Leu Leu Asn Ala Glu Leu Glu Glu Lys Met Met Gln Glu Ala Glu Lys
                100   105   110
Leu Lys Ala Gln Gly Glu Tyr Ser Arg Lys Leu Glu Glu Arg Phe Met
                115   120   125
Thr Leu Ala Ala Asn His Glu Leu Met Leu Arg Phe Lys Asp Glu Tyr
        130   135   140
Lys Ser Glu Asn Ile Lys Leu Arg Glu Glu Asn Glu Lys Leu Arg Leu
145   150   155   160
Glu Asn Asn Ser Leu Phe Ser Gln Ala Leu Lys Asp Glu Glu Ala Lys
                165   170   175
Val Leu Gln Leu Thr Val Arg Cys Glu Ala Leu Thr Gly Glu Leu Glu
                180   185   190
Thr Leu Lys Glu Arg Cys
        195   198

<210> 999
<211> 79
<212>Amino acid
<213> Homo sapiens

<400> 999
Asp Pro Gly Ala Ser His Ala Ser Val Gln Val Gln Val Leu Lys Glu
1   5   10   15
Gln Leu Phe Ala Gly Arg Met Pro Ser Pro Phe Arg Ser Cys Ala Leu
            20   25   30
Met Gly Met Cys Gly Ser Arg Ser Ala Asp Asn Leu Ser Cys Pro Ser
        35   40   45
Pro Leu Asn Val Met Glu Pro Val Ser Phe Phe Pro Leu Lys Ser Leu
        50   55   60
Gly Lys Gly Met Ile Gln His Phe Arg His Ile Val Ser Leu Val
65   70   75   79

<210> 1000
<211> 206
<212>Amino acid
<213> Homo sapiens

```
        <400> 1000
Val Thr Thr Thr Thr His Ser Val Gly Arg Gly His Glu Leu Gln Leu
1               5               10              15
Leu Asn Glu Glu Leu Arg Asn Ile Glu Leu Glu Cys Gln Asn Ile Met
            20              25              30
Gln Ala His Arg Leu Gln Lys Val Thr Asp Gln Tyr Gly Asp Ile Trp
        35              40              45
Thr Leu His Asp Gly Gly Phe Arg Asn Tyr Asn Thr Ser Ile Asp Met
    50              55              60
Gln Arg Gly Lys Leu Asp Asp Ile Met Glu His Pro Glu Lys Ser Asp
65              70              75              80
Lys Asp Ser Ser Ser Ala Tyr Asn Thr Ala Glu Ser Cys Arg Ser Thr
            85              90              95
Pro Leu Thr Val Asp Arg Ser Pro Asp Ser Ser Leu Pro Arg Val Ile
            100             105             110
Asn Leu Thr Asn Lys Lys Asn Leu Arg Ser Thr Met Ala Ala Thr Gln
        115             120             125
Ser Ser Ser Gly Gln Ser Ser Lys Glu Ser Thr Ser Thr Lys Ala Lys
        130             135             140
Thr Thr Glu Gln Gly Cys Ser Ala Glu Ser Lys Glu Lys Val Leu Glu
145             150             155             160
Gly Ser Lys Leu Pro Asp Gln Glu Lys Ala Val Ser Glu His Ile Pro
            165             170             175
Tyr Leu Ser Pro Tyr His Ser Ser Ser Tyr Arg Tyr Ala Asn Ile Pro
            180             185             190
Ala His Ala Arg His Tyr Gln Ser Tyr Met Gln Leu Ile Gln
        195             200             205 206
```

```
        <210> 1001
        <211> 138
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1001
Val Trp Gly Cys Leu Ala Thr Val Ser Thr His Lys Lys Ile Gln Gly
1               5               10              15
Leu Pro Phe Gly Asn Cys Leu Pro Val Ser Asp Gly Pro Phe Asn Asn
            20              25              30
Ser Thr Gly Ile Pro Phe Phe Tyr Met Thr Ala Lys Asp Pro Val Val
        35              40              45
Ala Asp Leu Met Lys Asn Pro Met Ala Ser Leu Met Leu Pro Glu Ser
    50              55              60
Glu Gly Glu Phe Cys Arg Lys Asn Ile Val Asp Pro Glu Asp Pro Arg
65              70              75              80
Cys Val Gln Leu Thr Leu Thr Gly Gln Met Ile Ala Val Ser Pro Glu
            85              90              95
Glu Val Glu Phe Ala Lys Gln Ala Met Phe Ser Arg His Pro Gly Met
            100             105             110
Arg Lys Trp Pro Arg Gln Tyr Glu Trp Phe Phe Met Lys Met Arg Ile
        115             120             125
Glu His Ile Trp Leu Gln Lys Trp Tyr Gly
    130             135         138
```

```
        <210> 1002
        <211> 133
```

```
     <212>Amino acid
     <213> Homo sapiens




     <400> 1002
Gln Ala Ala Asn Met Ala Val Ala Arg Val Asp Ala Ala Leu Pro Pro
 1               5                   10                  15
Gly Glu Gly Ser Val Val Asn Trp Ser Gly Gln Gly Leu Gln Lys Leu
            20                  25                  30
Gly Pro Asn Leu Pro Cys Glu Ala Asp Ile His Thr Leu Ile Leu Asp
        35                  40                  45
Lys Asn Gln Ile Ile Lys Leu Glu Asn Leu Glu Lys Cys Lys Arg Leu
    50                  55                  60
Ile Gln Leu Ser Val Ala Asn Asn Arg Leu Val Arg Met Met Gly Val
65                  70                  75                  80
Ala Lys Leu Thr Leu Leu Arg Val Leu Asn Leu Pro His Asn Ser Ile
            85                  90                  95
Gly Cys Val Glu Gly Leu Lys Glu Leu Val His Leu Glu Trp Leu Asn
            100                 105                 110
Leu Ala Gly Asn Asn Leu Ile Ala Met Glu Gln Ile Asn Ser Cys Thr
            115                 120                 125
Ala Leu Gln His Leu
130             133




     <210> 1003
     <211> 276
     <212>Amino acid
     <213> Homo sapiens




     <400> 1003
Phe Arg Ala Ala Val Gly Ala Val Pro Glu Gly Ala Trp Lys Asp Thr
 1               5                   10                  15
Ala Gln Leu His Lys Ser Glu Glu Ala Lys Arg Val Leu Arg Tyr Tyr
            20                  25                  30
Leu Phe Gln Gly Gln Arg Tyr Ile Trp Ile Glu Thr Gln Gln Ala Phe
        35                  40                  45
Tyr Gln Val Ser Leu Leu Asp His Gly Arg Ser Cys Asp Asp Val His
    50                  55                  60
Arg Ser Arg His Gly Leu Ser Leu Gln Asp Gln Met Glu Arg Lys Ala
65                  70                  75                  80
Ile Tyr Gly Pro Asn Val Ile Ser Ile Pro Val Lys Ser Tyr Pro Gln
            85                  90                  95
Leu Leu Val Asp Glu Ala Phe Ser Ile Ala Leu Trp Leu Ala Asp His
            100                 105                 110
Tyr Tyr Trp Tyr Ala Leu Cys Ile Phe Leu Ile Ser Ser Ile Ser Ile
            115                 120                 125
Cys Leu Ser Leu Tyr Lys Thr Arg Lys Gln Ser Gln Thr Leu Arg Asp
            130                 135                 140
Met Val Lys Leu Ser Met Arg Val Cys Val Cys Arg Pro Gly Gly Glu
145             150                 155                 160
Glu Glu Trp Val Asp Ser Ser Glu Leu Val Pro Gly Asp Cys Leu Val
            165                 170                 175
Leu Ser Gln Glu Gly Gly Leu Met Pro Cys Asp Ala Ala Leu Val Ala
            180                 185                 190
Gly Glu Cys Met Val Asn Asp Ser Ser Leu Thr Gly Glu Ser Ile Pro
            195                 200                 205
```

```
Val Leu Lys Thr Ala Leu Pro Glu Gly Leu Gly Pro Tyr Cys Ala Glu
    210             215             220
Thr His Arg Arg His Thr Leu Phe Cys Gly Thr Leu Ile Leu His Ala
225             230             235             240
Arg Ala Tyr Val Gly Pro His Val Leu Ala Val Val Thr Arg Thr Gly
                245             250             255
Met Ser Arg Glu Ala Gly Leu Glu Arg Asp Pro Gly Ser Ala Pro Leu
            260             265             270
Lys Arg Trp Ser
    275 276
```

```
<210> 1004
<211> 222
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1004
Phe Val Gly Gly Gly Leu His Leu His Leu Cys Leu Leu Leu Cys Phe
1               5               10              15
Met Leu Pro Glu Asp Ala Ala Met Ala Val Leu Thr Ala Ser Asn His
            20              25              30
Val Ser Asn Val Thr Val Asn Tyr Asn Ile Thr Val Glu Arg Met Asn
            35              40              45
Arg Met Gln Gly Leu Arg Val Ser Thr Val Pro Ala Val Leu Ser Pro
    50              55              60
Asn Ala Thr Leu Ala Leu Thr Ala Gly Val Leu Val Asp Ser Ala Val
65              70              75              80
Glu Val Ala Phe Leu Trp Thr Phe Gly Asp Gly Glu Gln Ala Leu His
                85              90              95
Gln Phe Gln Pro Pro Tyr Asn Glu Ser Phe Pro Val Pro Asp Pro Ser
            100             105             110
Val Ala Gln Val Leu Val Glu His Asn Val Thr His Thr Tyr Ala Ala
    115             120             125
Pro Gly Glu Tyr Val Leu Thr Val Leu Ala Ser Asn Ala Phe Glu Asn
    130             135             140
Arg Thr Gln Gln Val Leu Ile Arg Ser Gly Arg Val Pro Ile Val Ser
145             150             155             160
Leu Glu Cys Val Ser Cys Lys Ala Gln Ala Val Tyr Glu Val Ser Arg
                165             170             175
Ser Ser Tyr Val Tyr Leu Glu Gly Arg Cys Leu Asn Cys Ser Ser Gly
            180             185             190
Ser Lys Arg Gly Arg Trp Ala Ala Arg Thr Phe Ser Asn Lys Thr Leu
    195             200             205
Val Leu Asp Glu Thr Thr Thr Ser Thr Gly Ser Ala Ser Met
    210             215             220 222
```

```
<210> 1005
<211> 363
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1005
Pro Glu Phe Leu Gly Arg Leu Phe Arg Gly Lys Ala Ala Thr Leu His
1               5               10              15
```

```
Val His Ser Asp Gln Lys Pro Leu His Asp Gly Ala Leu Gly Ser Gln
            20              25                  30
Gln Asn Leu Val Arg Met Lys Glu Ala Leu Arg Ala Ser Thr Met Asp
            35              40                  45
Val Thr Val Val Leu Pro Ser Gly Leu Glu Lys Arg Ser Val Leu Asn
    50              55                  60
Gly Ser His Ala Met Met Asp Leu Leu Val Glu Leu Cys Leu Gln Asn
65              70                  75                  80
His Leu Asn Pro Ser His His Ala Leu Glu Ile Arg Ser Ser Glu Thr
            85              90                  95
Gln Gln Pro Leu Ser Phe Lys Pro Asn Thr Leu Ile Gly Thr Leu Asn
            100             105                 110
Val His Thr Val Phe Leu Lys Glu Lys Val Pro Glu Glu Lys Val Lys
    115             120                 125
Pro Gly Pro Pro Lys Val Pro Glu Lys Ser Val Arg Leu Val Val Asn
    130             135                 140
Tyr Leu Arg Thr Gln Lys Ala Val Val Arg Val Ser Pro Glu Val Pro
145             150                 155                 160
Leu Gln Asn Ile Leu Pro Val Ile Cys Ala Lys Cys Glu Val Ser Pro
            165             170                 175
Glu His Val Val Leu Leu Arg Asp Asn Ile Ala Gly Glu Glu Leu Glu
            180             185                 190
Leu Ser Lys Ser Leu Asn Glu Leu Gly Ile Lys Glu Leu Tyr Ala Trp
            195             200                 205
Asp Asn Arg Arg Glu Thr Phe Arg Lys Ser Ser Leu Gly Asn Asp Glu
    210             215                 220
Thr Asp Lys Glu Lys Lys Lys Phe Leu Gly Phe Phe Lys Val Asn Lys
225             230                 235                 240
Arg Ser Asn Ser Lys Gly Cys Leu Thr Thr Pro Asn Ser Pro Ser Met
            245             250                 255
His Ser Arg Ser Leu Thr Leu Gly Pro Ser Leu Ser Leu Gly Ser Ile
            260             265                 270
Ser Gly Val Ser Val Lys Ser Glu Met Lys Lys Arg Arg Ala Pro Pro
    275             280                 285
Pro Pro Gly Ser Gly Pro Pro Val Gln Asp Lys Ala Ser Glu Lys Val
    290             295                 300
Ser Leu Gly Ser Gln Ile Asp Leu Gln Lys Lys Lys Arg Arg Ala Pro
305             310                 315                 320
Ala Pro Pro Pro Pro Gln Pro Pro Pro Ser Pro Leu Ile Pro Asn
            325             330                 335
Arg Thr Glu Asp Lys Glu Glu Asn Arg Lys Ser Thr Met Val Tyr Cys
            340             345                 350
Cys Ala Ser Phe Pro Thr Gln Ala Lys Arg Phe
            355             360     363
```

    <210> 1006
    <211> 95
    <212> Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(95)
    <223> X = any amino acid or stop code

    <400> 1006
```
Val Gln Trp His Asn Leu His Ser Leu Gln Pro Leu Pro Ala Gly Phe
1               5                   10                  15
Lys Xaa Phe Leu Cys Phe Ser Leu Pro Ser Ser Trp Asp Tyr Arg Cys
```

```
                    20                    25                    30
Ala Pro Pro Leu Pro Ala Pro Phe Phe Phe Tyr Phe Leu Phe Leu Val
        35                    40                    45
Glu Leu Gly Phe His His Ile Gly Xaa Ala Gly Leu Glu Leu Thr Ser
        50                    55                    60
Thr Asp Leu Pro Ala Ser Ala Ser Glu Ser Ala Gly Ile Thr Gly Met
65                    70                    75                    80
Ser His Arg Ala Arg Pro Met Asp Phe Phe Leu Leu Lys Ile Leu
                    85                    90                    95
```

```
<210> 1007
<211> 151
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1007
Gly Arg Arg Phe Arg Pro Pro Ser Asp Glu Glu Arg Glu Pro Trp Glu
1               5                   10                  15
Pro Trp Thr Gln Leu Arg Leu Ser Gly His Leu Lys Pro Leu His Tyr
            20                  25                  30
Asn Leu Met Leu Thr Ala Phe Met Glu Asn Phe Thr Phe Ser Gly Glu
        35                  40                  45
Val Asn Val Glu Ile Ala Cys Arg Asn Ala Thr Arg Tyr Val Val Leu
    50                  55                  60
His Ala Ser Arg Val Ala Val Glu Lys Val Gln Leu Ala Glu Asp Arg
65                  70                  75                  80
Ala Phe Gly Ala Val Pro Val Ala Gly Phe Phe Leu Tyr Pro Gln Thr
            85                  90                  95
Gln Val Leu Val Val Val Leu Asn Arg Thr Leu Asp Ala Gln Arg Asn
            100                 105                 110
Tyr Asn Leu Lys Ile Ile Tyr Asn Ala Leu Ile Glu Asn Glu Leu Leu
        115                 120                 125
Gly Phe Phe Arg Ser Ser Tyr Val Leu His Gly Glu Arg Arg Phe Leu
    130                 135                 140
Gly Val Thr Gln Phe Ser Pro
145                 150 151
```

```
<210> 1008
<211> 64
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(64)
<223> X = any amino acid or stop code
```

```
<400> 1008
Lys Glu Leu Asp Pro Phe Tyr Asn Ser Xaa Arg Lys Ile Lys Tyr Leu
1               5                   10                  15
Arg Ile Tyr Leu Thr Lys Glu Val Lys Asp Leu Tyr Lys Glu Asn Tyr
            20                  25                  30
Lys Thr Leu Leu Lys Glu Ile Thr Asp Asp Thr Asn Lys Lys His Ile
        35                  40                  45
```

Pro Ser Ser Trp Thr Gly Arg Ile Asn Thr Val Lys Met Thr Ile Leu
    50   55   60   64

<210> 1009
<211> 60
<212>Amino acid
<213> Homo sapiens

<400> 1009
Val Pro His Pro Leu Gln Ala Ile His Glu Gln Met Asn Cys Lys Glu
 1   5   10   15
Tyr Gln Glu Asp Leu Ala Leu Arg Ala Gln Asn Asp Ala Ala Ala Arg
              20   25   30
Arg Pro Ser Glu Met Phe Lys Val Arg Leu Ala Gln Gly Arg Gly Leu
          35   40   45
Ala Ser Leu Ser Ser Gly Ile Gln Ser Gly Val Gly
    50   55   60

<210> 1010
<211> 44
<212>Amino acid
<213> Homo sapiens

<400> 1010
Arg Trp Asn Ser Leu Thr Cys Val Val Leu Thr Phe Leu Gly His Arg
 1   5   10   15
Leu Leu Lys Arg Phe Leu Val Pro Lys Leu Arg Arg Phe Leu Lys Pro
              20   25   30
Gln Gly His Pro Arg Leu Leu Leu Trp Phe Lys Arg
          35   40   44

<210> 1011
<211> 219
<212>Amino acid
<213> Homo sapiens

<400> 1011
Tyr Gly Glu Phe Val Thr Tyr Gln Gly Val Ala Val Thr Arg Ser Arg
 1   5   10   15
Lys Glu Gly Ile Ala His Asn Tyr Lys Asn Glu Thr Glu Trp Arg Ala
              20   25   30
Asn Ile Asp Thr Val Met Ala Trp Phe Thr Glu Glu Asp Leu Asp Leu
          35   40   45
Val Thr Leu Tyr Phe Gly Glu Pro Asp Ser Thr Gly His Arg Tyr Gly
    50   55   60
Pro Glu Ser Pro Glu Arg Arg Glu Met Val Arg Gln Val Asp Arg Thr
 65   70   75   80

556

```
Val Gly Tyr Leu Arg Glu Ser Ile Ala Arg Asn His Leu Thr Asp Arg
                 85              90                  95
Leu Asn Leu Ile Ile Thr Ser Asp His Gly Met Thr Thr Val Asp Lys
            100             105                 110
Arg Ala Gly Asp Leu Val Glu Phe His Lys Phe Pro Asn Phe Thr Phe
        115             120                 125
Arg Asp Ile Glu Phe Glu Leu Leu Asp Tyr Gly Pro Asn Gly Met Leu
    130             135                 140
Leu Pro Lys Glu Gly Arg Leu Glu Lys Val Tyr Asp Ala Leu Lys Asp
145             150                 155                 160
Ala His Pro Lys Leu His Val Tyr Lys Lys Glu Ala Phe Pro Glu Ala
            165                 170                 175
Phe His Tyr Ala Asn Asn Pro Arg Val Thr Pro Leu Leu Met Tyr Ser
        180                 185                 190
Asp Leu Gly Tyr Val Ile His Gly Val Ser Arg Leu Leu Glu Ala Pro
        195                 200                 205
Pro Pro Gly Ala Pro Ser Pro Gly Ser Gly Ser
210                 215                 219


        <210> 1012
        <211> 89
        <212>Amino acid
        <213> Homo sapiens




        <400> 1012
Arg Ile Pro Leu Leu Arg Leu Arg Ser Ser Thr Tyr Arg Ser Lys Gly
1               5               10                  15
Phe Asp Val Thr Val Lys His Ser His Gly Ser Trp Thr Gly Phe Gly
            20                  25                  30
Gly Glu Asp Leu Ala Thr Ile Pro Lys Gly Leu Asn Thr Tyr Phe Leu
        35                  40                  45
Val Asn Ile Ala Thr Ile Phe Glu Ser Lys Asn Phe Phe Leu Pro Gly
        50                  55                  60
Ile Lys Trp Asn Gly Ile Leu Gly Leu Ser Tyr Ala Thr Leu Ala Lys
65                  70                  75                  80
Pro Ser Ser Ser Leu Glu Thr Phe Phe
                85              89


        <210> 1013
        <211> 82
        <212>Amino acid
        <213> Homo sapiens




        <400> 1013
Ile Lys Ser Tyr Ser Gly Pro Asn Gly Arg Ser Cys Gln Ile Trp Gln
1               5               10                  15
Arg Leu Arg Trp Gly Ser Arg Glu Leu Leu Leu Gly Trp Lys Leu Ser
            20                  25                  30
His Ser Phe Ser Thr Cys Pro Phe Gln Phe Pro Asp Ile Val Glu Phe
        35                  40                  45
Cys Glu Ala Met Ala Asn Ala Gly Lys Thr Val Ile Val Ala Ala Leu
        50                  55                  60
Asp Gly Thr Phe Gln Arg Lys Val Arg Arg Leu Ile Gln Val Trp Ser
65                  70                  75                  80
```

Trp Asp
   82

        <210> 1014
        <211> 107
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(107)
        <223> X = any amino acid or stop code

        <400> 1014
Tyr Cys Phe Cys Phe Asp Leu Leu His Xaa Cys Ile His Arg Asp Val
 1   5   10   15
Lys Pro Glu Asn Ile Leu Ile Thr Lys His Ser Val Ile Lys Leu Cys
             20   25   30
Asp Phe Gly Phe Ala Arg Leu Leu Thr Gly Pro Ser Asp Tyr Tyr Thr
         35   40   45
Asp Tyr Val Ala Thr Arg Trp Tyr Arg Ser Pro Glu Leu Pro Val Gly
     50   55   60
Asp Thr Gln Tyr Gly Pro Pro Val Asp Val Trp Ala Ile Gly Cys Val
 65   70   75   80
Ser Ala Glu Leu Leu Ser Gly Lys Cys Leu Trp Trp Pro Gly Lys Ser
                 85   90   95
Asp Met Leu Asp Gln Leu Tyr Leu Ile Arg Lys
             100   105   107

        <210> 1015
        <211> 70
        <212>Amino acid
        <213> Homo sapiens

        <400> 1015
Arg Gly Trp Ala Leu Asp Trp Ile Gly Ala Asp Leu Ser Leu His Leu
 1   5   10   15
Gln Glu Glu Val Glu Thr Glu Val Ala Trp Glu Glu Cys Gly His Val
             20   25   30
Leu Leu Ser Leu Cys Tyr Ser Ser Gln Gln Gly Gly Leu Leu Val Gly
         35   40   45
Val Leu Arg Cys Ala His Leu Ala Pro Met Asp Ala Asn Gly Tyr Ser
     50   55   60
Asp Pro Phe Val Arg Leu
 65   70

        <210> 1016
        <211> 142
        <212>Amino acid
        <213> Homo sapiens

558

```
       <400> 1016
Gly Gly Ile Leu Ala Met Glu Tyr Ala Pro Gly Gly Thr Leu Ala Glu
1               5                   10                  15
Phe Ile Gln Lys Arg Cys Asn Ser Leu Leu Glu Glu Glu Thr Ile Leu
            20                  25                  30
His Phe Phe Val Gln Ile Leu Leu Ala Leu His His Val His Thr His
        35                  40                  45
Leu Ile Leu His Arg Asp Leu Lys Thr Gln Asn Ile Leu Leu Asp Lys
    50              55                  60
His Arg Met Val Val Lys Ile Gly Asp Phe Gly Ile Ser Lys Ile Leu
65              70                  75                  80
Ser Ser Lys Ser Lys Ala Tyr Thr Val Val Gly Thr Pro Cys Tyr Ile
                85                  90                  95
Ser Pro Glu Leu Cys Glu Gly Lys Pro Tyr Asn Gln Lys Ser Asp Ile
            100                 105                 110
Trp Ala Leu Gly Cys Val Leu Tyr Glu Leu Ala Ser Leu Lys Arg Ala
        115                 120                 125
Phe Glu Ala Ala Asn Leu Pro Ala Leu Val Leu Lys Ile Met
    130                 135                 140     142


       <210> 1017
       <211> 87
       <212>Amino acid
       <213> Homo sapiens




       <400> 1017
Val Gln Cys Gly Gly Ile His Gln Val Ser Gly Ala Val Val Val Ser
1               5                   10                  15
Gly Leu Leu Gln Gly Met Met Gly Leu Leu Gly Ser Pro Gly His Val
            20                  25                  30
Phe Pro His Cys Gly Pro Leu Val Leu Ala Pro Ser Leu Val Val Ala
        35                  40                  45
Gly Leu Ser Ala His Arg Glu Val Ala Gln Phe Cys Phe Thr His Trp
    50              55                  60
Gly Leu Ala Leu Leu Tyr Val Ser Pro Glu Arg Arg Gly Met Val Pro
65              70                  75                  80
Ser Gly Gly Val Trp Gly Asp
                85      87


       <210> 1018
       <211> 160
       <212>Amino acid
       <213> Homo sapiens




       <400> 1018
Pro Arg Met Thr Gly Ser Thr His Ala Ser Ala Pro Ser Tyr Gly Gly
1               5                   10                  15
Ser Cys Arg Asn Asn Leu Phe Tyr Arg Glu Glu Thr Tyr Thr Pro Lys
            20                  25                  30
Ala Glu Thr Asp Glu Met Asn Glu Val Glu Thr Ala Pro Ile Pro Glu
        35                  40                  45
Glu Asn His Val Trp Leu Gln Pro Arg Val Met Arg Pro Thr Lys Pro
```

```
            50                    55                   60
Lys Lys Thr Ser Ala Val Asn Tyr Met Thr Gln Val Val Arg Cys Asp
 65                    70                   75                   80
Thr Lys Met Lys Asp Arg Cys Ile Gly Ser Thr Cys Asn Arg Tyr Gln
                    85                   90                   95
Cys Pro Ala Gly Cys Leu Asn His Lys Ala Lys Ile Phe Gly Ser Leu
                   100                  105                  110
Phe Tyr Glu Ser Phe Ala Ser Ile Cys Arg Ala Ala Ile His Tyr Gly
                   115                  120                  125
Ile Leu Asp Asp Lys Gly Gly Leu Val Asp Ile Thr Arg Asn Gly Lys
                   130                  135                  140
Val Pro Phe Phe Val Lys Ser Glu Arg His Gly Val Gln Ser Leu Arg
145                  150                  155                  160
```


```
    <210> 1019
    <211> 174
    <212>Amino acid
    <213> Homo sapiens
```


```
    <400> 1019
Val Pro Gln Asn Ile Ile Cys Ala Phe Phe Cys Val Pro Cys Arg Phe
 1                     5                   10                   15
Ala Ser Thr Ile Pro Phe Trp Gly Leu Thr Leu His Leu Gln His Leu
                    20                   25                   30
Gly Asn Asn Val Phe Leu Leu Gln Thr Leu Phe Gly Ala Val Thr Leu
                    35                   40                   45
Leu Ala Asn Cys Val Ala Pro Trp Ala Leu Asn His Met Ser Arg Arg
     50                    55                   60
Leu Ser Gln Met Leu Leu Met Phe Leu Leu Ala Thr Cys Leu Leu Ala
 65                   70                   75                   80
Ile Ile Phe Val Pro Gln Glu Met Gln Thr Leu Arg Val Val Leu Ala
                    85                   90                   95
Thr Leu Gly Val Gly Ala Ala Ser Leu Gly Ile Thr Cys Ser Thr Ala
                   100                  105                  110
Gln Glu Asn Glu Leu Ile Pro Ser Ile Ile Arg Gly Arg Ala Thr Gly
                   115                  120                  125
Ile Thr Gly Asn Phe Ala Asn Ile Gly Gly Ala Leu Ala Ser Leu Val
                   130                  135                  140
Met Ile Leu Ser Ile Tyr Ser Arg Pro Leu Pro Trp Ile Ile Tyr Gly
145                  150                  155                  160
Val Phe Ala Ile Leu Ser Gly Leu Val Val Leu Leu Leu Pro
                   165                  170                  174
```


```
    <210> 1020
    <211> 225
    <212>Amino acid
    <213> Homo sapiens
```


```
    <400> 1020
Val Leu Val Ser Arg Asp His Met Lys Ser Ala Gln Gln Phe Phe Gln
 1                     5                   10                   15
Leu Val Gly Gly Ser Ala Ser Glu Cys Asp Thr Ile Pro Gly Arg Gln
```

```
                20                      25                      30
Cys Met Ala Ser Cys Phe Phe Leu Leu Lys Gln Phe Asp Asp Val Leu
        35                      40                      45
Ile Tyr Leu Asn Ser Phe Lys Ser His Phe Tyr Asn Asp Asp Ile Phe
    50                      55                      60
Asn Phe Asn Tyr Ala Gln Ala Lys Ala Ala Thr Gly Asn Thr Ser Glu
65                      70                      75                      80
Gly Glu Glu Ala Phe Leu Leu Ile Gln Ser Glu Lys Met Lys Asn Asp
                85                      90                      95
Tyr Ile Tyr Leu Ser Trp Leu Ala Arg Gly Tyr Ile Met Asn Lys Lys
            100                     105                     110
Pro Arg Leu Ala Trp Glu Leu Tyr Leu Lys Met Glu Thr Ser Gly Glu
        115                     120                     125
Ser Phe Ser Leu Leu Gln Leu Ile Ala Asn Asp Cys Tyr Lys Met Gly
    130                     135                     140
Gln Phe Tyr Tyr Ser Ala Lys Ala Phe Asp Val Leu Glu Arg Leu Asp
145                     150                     155                     160
Pro Asn Pro Glu Tyr Trp Glu Gly Lys Arg Gly Ala Cys Val Gly Ile
                165                     170                     175
Phe Gln Met Ile Ile Ala Gly Arg Glu Pro Lys Glu Thr Leu Arg Glu
            180                     185                     190
Val Leu His Leu Leu Arg Ser Thr Gly Asn Thr Gln Val Glu Tyr Met
        195                     200                     205
Ile Arg Ile Met Lys Lys Trp Ala Lys Glu Asn Arg Val Ser Ile Leu
    210                     215                     220
Lys
225


        <210> 1021
        <211> 118
        <212>Amino acid
        <213> Homo sapiens




        <400> 1021
Leu Lys Val Ser Asp Glu Leu Val Gln Gln Tyr Gln Ile Lys Asn Gln
1               5                       10                      15
Cys Leu Ser Ala Ile Ala Ser Asp Ala Glu Gln Glu Pro Lys Ile Asp
            20                      25                      30
Pro Tyr Ala Phe Val Glu Gly Asp Glu Glu Phe Leu Phe Pro Asp Lys
        35                      40                      45
Lys Asp Arg Gln Asn Ser Glu Arg Glu Ala Gly Lys Lys His Lys Val
    50                      55                      60
Arg Glu Ile Thr Val His Gln Arg Val Thr Val Asp Phe Val Ala Leu
65                      70                      75                      80
His Ile Val Thr Leu Leu Leu Pro Gln Leu Ser His Phe Phe Cys Leu
                85                      90                      95
Arg Ile Glu Arg Val Ile Ile Tyr Leu Glu Lys Pro Ile Phe Ala Arg
            100                     105                     110
Leu Arg Trp Leu Met Pro
        115             118


        <210> 1022
        <211> 178
        <212>Amino acid
        <213> Homo sapiens
```

```
<400> 1022
Gly Val Pro Arg Asn Leu Pro Ser Ser Leu Glu Tyr Leu Leu Leu Ser
1                   5                   10                  15
Tyr Asn Arg Ile Val Lys Leu Ala Pro Glu Asp Leu Ala Asn Leu Thr
            20                  25                  30
Ala Leu Arg Val Leu Asp Val Gly Gly Asn Cys Arg Arg Cys Asp His
        35                  40                  45
Ala Pro Asn Pro Cys Met Glu Cys Pro Arg His Phe Pro Gln Leu His
    50                  55                  60
Pro Asp Thr Phe Ser His Leu Ser Arg Leu Glu Gly Leu Val Leu Lys
65                  70                  75                  80
Asp Ser Ser Leu Ser Trp Leu Asn Ala Ser Trp Phe Arg Gly Leu Gly
                85                  90                  95
Asn Leu Arg Val Leu Asp Leu Ser Glu Asn Phe Leu Tyr Lys Cys Ile
            100                 105                 110
Thr Lys Thr Lys Ala Phe Gln Gly Leu Thr Gln Leu Arg Lys Leu Asn
        115                 120                 125
Leu Ser Phe Asn Tyr Gln Lys Arg Val Ser Phe Ala His Leu Val Ser
    130                 135                 140
Gly Pro Pro Phe Leu Arg Gly Ser Leu Gly Arg Pro Leu Lys Gly Ala
145                 150                 155                 160
Gly Thr Trp His Gly Asn Leu Ser Phe Pro Leu His Phe Glu Trp Gly
                165                 170                 175
Lys Thr
178


<210> 1023
<211> 146
<212>Amino acid
<213> Homo sapiens




<400> 1023
Ile Leu Phe Ala Ala Leu Ile Trp Ser Ser Phe Asp Glu Asn Ile Glu
1                   5                   10                  15
Ala Ser Ala Gly Gly Gly Gly Ser Ser Ile Asp Ala Val Met Val
            20                  25                  30
Asp Ser Gly Ala Val Val Glu Gln Tyr Lys Arg Met Gln Ser Gln Glu
        35                  40                  45
Ser Ser Ala Lys Arg Ser Asp Glu Gln Arg Lys Met Lys Glu Gln Gln
    50                  55                  60
Ala Ala Glu Glu Leu Arg Glu Lys Gln Ala Ala Glu Gln Glu Arg Leu
65                  70                  75                  80
Lys Gln Leu Glu Lys Glu Arg Leu Ala Ala Gln Glu Gln Lys Lys Gln
                85                  90                  95
Ala Glu Glu Ala Ala Lys Gln Ala Glu Leu Lys Gln Lys Gln Ala Glu
            100                 105                 110
Glu Ala Ala Ala Lys Ala Ala Ala Asp Ala Lys Ala Lys Ala Glu Ala
        115                 120                 125
Asp Ala Lys Ala Ala Glu Glu Ala Ala Lys Lys Ala Ala Ala Asp Ala
    130                 135                 140
Lys Lys
145 146


<210> 1024
<211> 39
<212>Amino acid
```

<213> Homo sapiens

<400> 1024

Ala	Met	Glu	Ile	Val	His	Glu	Pro	Arg	Asp	Leu	Glu	Arg	Tyr	Met	Arg
1				5					10					15	
Glu	Ala	Val	Lys	Val	Ser	Asn	Asp	Ser	Pro	Val	Leu	Leu	Asp	Arg	Phe
			20					25					30		
Leu	Asn	Asp	Ala	Ile	Glu	Cys									
			35			39									

<210> 1025
<211> 53
<212>Amino acid
<213> Homo sapiens

<400> 1025

Met	Leu	Ser	Pro	Gly	Tyr	Asp	Tyr	Gly	Tyr	Val	Cys	Val	Glu	Phe	Ser
1				5					10					15	
Leu	Leu	Glu	Asp	Ala	Ile	Gly	Cys	Met	Glu	Ala	Asn	Gln	Val	Ala	Leu
			20					25					30		
Tyr	Phe	Gly	Gln	Met	Met	Leu	Glu	Gly	Tyr	Ile	Phe	Leu	Tyr	Met	Gly
		35					40					45			
Arg	Glu	Gly	Phe	Lys											
	50			53											

<210> 1026
<211> 365
<212>Amino acid
<213> Homo sapiens

<400> 1026

Pro	Arg	Val	Arg	Ser	Ser	Gly	Gly	Gln	Glu	Asp	Pro	Ala	Ser	Gln	Gln
1				5					10					15	
Trp	Ala	Arg	Pro	Arg	Phe	Thr	Gln	Pro	Ser	Lys	Met	Arg	Arg	Arg	Val
			20					25					30		
Ile	Ala	Arg	Pro	Val	Gly	Ser	Ser	Val	Arg	Leu	Lys	Cys	Val	Ala	Ser
		35					40					45			
Gly	His	Pro	Arg	Pro	Asp	Ile	Thr	Trp	Met	Lys	Asp	Asp	Gln	Ala	Leu
	50				55					60					
Thr	Arg	Pro	Glu	Ala	Ala	Glu	Pro	Arg	Lys	Lys	Lys	Trp	Thr	Leu	Ser
65				70					75						80
Leu	Lys	Asn	Leu	Arg	Pro	Glu	Asp	Ser	Gly	Lys	Tyr	Thr	Cys	Arg	Val
			85					90					95		
Ser	Asn	Arg	Ala	Gly	Ala	Ile	Asn	Ala	Thr	Tyr	Lys	Val	Asp	Val	Ile
			100					105					110		
Gln	Arg	Thr	Arg	Ser	Lys	Pro	Val	Leu	Thr	Gly	Thr	His	Pro	Val	Asn
		115					120					125			
Thr	Thr	Val	Asp	Phe	Gly	Gly	Thr	Thr	Ser	Phe	Gln	Cys	Lys	Val	Arg
	130				135					140					
Ser	Asp	Val	Lys	Pro	Val	Ile	Gln	Trp	Leu	Lys	Arg	Val	Glu	Tyr	Gly

```
145                  150                  155                  160
Ala Glu Gly Arg His Asn Ser Thr Ile Asp Val Gly Gly Gln Lys Phe
                  165                  170                  175
Val Val Leu Pro Thr Gly Asp Val Trp Ser Arg Pro Asp Gly Ser Tyr
              180                  185                  190
Leu Asn Lys Leu Leu Ile Thr Arg Ala Arg Gln Asp Asp Ala Gly Met
          195                  200                  205
Tyr Ile Cys Leu Gly Ala Asn Thr Met Gly Tyr Ser Phe Arg Ser Ala
      210                  215                  220
Phe Leu Thr Val Leu Pro Asp Pro Lys Pro Pro Gly Pro Pro Val Ala
225                  230                  235                  240
Ser Ser Ser Ser Ala Thr Ser Leu Pro Trp Pro Val Val Ile Gly Ile
              245                  250                  255
Pro Ala Gly Ala Val Phe Ile Leu Gly Thr Leu Leu Leu Trp Leu Cys
              260                  265                  270
Gln Ala Gln Lys Lys Pro Cys Thr Pro Ala Pro Ala Pro Pro Leu Pro
          275                  280                  285
Gly His Arg Pro Pro Gly Thr Ala Arg Asp Arg Ser Gly Asp Lys Asp
      290                  295                  300
Leu Pro Ser Leu Ala Ala Leu Ser Ala Gly Pro Gly Val Gly Leu Cys
305                  310                  315                  320
Glu Glu His Gly Ser Pro Ala Ala Pro Gln His Leu Leu Gly Pro Gly
              325                  330                  335
Pro Val Ala Gly Pro Lys Leu Tyr Pro Lys Leu Tyr Thr Asp Ile Pro
              340                  345                  350
His His Thr His Thr His Thr Pro His Pro Pro Ala Asn
          355                  360                  365
```

```
    <210> 1027
    <211> 30
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1027
Asn Phe His Phe Thr Gly Lys Cys Leu Phe Met Ser Gly Leu Ser Glu
1                   5                   10                  15
Val Gln Leu Thr His Met Asp Asp His Thr Leu Pro Gly Tyr
            20                  25                  30
```

```
    <210> 1028
    <211> 104
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1028
Ser Pro Arg Lys Arg Lys Thr Arg His Ser Thr Asn Pro Pro Leu Glu
1                   5                   10                  15
Cys His Val Gly Trp Val Met Asp Ser Arg Asp His Gly Pro Gly Thr
            20                  25                  30
Ser Ser Val Ser Thr Ser Asn Ala Ser Pro Ser Glu Gly Ala Pro Leu
        35                  40                  45
Ala Gly Ser Tyr Gly Cys Thr Pro His Ser Phe Pro Lys Phe Gln His
    50                  55                  60
Pro Ser His Glu Leu Leu Lys Glu Asn Gly Phe Thr Gln Gln Val Tyr
```

```
   65                      70                   75                      80
His Lys Tyr Arg Arg Arg Cys Leu Ser Glu Arg Lys Arg Leu Gly Ile
                         85                   90                      95
Gly Gln Ser Gln Glu Met Asn Thr
              100                   104
```

```
      <210> 1029
      <211> 119
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 1029
Pro Gly Ser Gly Gly Ser Ala Gly Gly Arg Asp Gly Ser Ala Tyr Gln
  1                   5                   10                      15
Gly Ala Leu Leu Pro Arg Glu Gln Phe Ala Ala Pro Leu Gly Arg Pro
                 20                   25                      30
Val Gly Thr Ser Tyr Ser Ala Thr Tyr Pro Ala Tyr Val Ser Pro Asp
              35                   40                      45
Val Ala Gln Ser Trp Thr Ala Gly Pro Phe Asp Gly Ser Val Leu His
        50                   55                      60
Gly Leu Pro Gly Arg Arg Pro Thr Phe Val Ser Asp Phe Leu Glu Glu
 65                   70                   75                      80
Phe Pro Gly Glu Gly Arg Glu Cys Val Asn Cys Gly Ala Leu Ser Thr
                 85                   90                      95
Pro Leu Trp Arg Arg Asp Gly Thr Gly His Tyr Leu Cys Asn Ala Cys
              100                  105                     110
Gly Leu Tyr His Lys Met Asn
        115                  119
```

```
      <210> 1030
      <211> 171
      <212>Amino acid
      <213> Homo sapiens
```

```
      <220>
      <221> misc_feature
      <222> (1)...(171)
      <223> X = any amino acid or stop code
```

```
      <400> 1030
Pro Asp His Arg His Gly Ala Leu Trp Trp Trp Tyr Ser Cys Gly Val
  1                   5                   10                      15
Leu Pro Val Thr Val Ser Arg Asn Glu Gly Asp Glu Arg Asn Gln Val
                 20                   25                      30
Leu Thr Leu Tyr Leu Trp Ile Arg Gln Glu Trp Thr Asp Ala Tyr Leu
              35                   40                      45
Arg Trp Asp Pro Asn Ala Tyr Gly Gly Leu Asp Ala Ile Arg Ile Pro
        50                   55                      60
Ser Ser Leu Val Trp Arg Pro Asp Ile Val Leu Tyr Asn Lys Tyr Cys
 65                   70                   75                      80
Leu Ser Ala Ala Pro Pro Leu Ser Tyr Pro Ser Leu Asp Leu Pro Leu
                 85                   90                      95
Ala Val Gly Val Xaa Xaa Ser Pro Leu Pro Thr Thr Xaa Pro Gly Cys
              100                  105                     110
```

```
His Ala Ala Leu Glu Ala Phe Pro Gln Asp Pro Ser Lys Leu Pro Ser
        115                 120             125
Thr Gln Pro Leu His Gly Thr Pro Thr Leu Gly Tyr Pro Arg Pro Ala
        130                 135             140
Gln Ala Glu Arg Leu Leu Gly Thr Tyr Cys Val Val Gln Gly Arg Cys
145             150                 155                 160
Leu Asn His Lys Gly Leu Ser Arg Ala His Phe
                165                 170 171
```

```
<210> 1031
<211> 198
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1031
Tyr Ala Leu Thr Gly Ala Leu Val Ile Val Thr Gly Met Val Met Gly
1               5               10                  15
Asn Ile Ala Asp Tyr Phe Asn Leu Pro Val Ser Ser Met Ser Asn Thr
            20                  25                  30
Phe Thr Phe Leu Asn Ala Gly Ile Leu Ile Ser Ile Phe Leu Asn Ala
        35                  40                  45
Trp Leu Met Glu Ile Val Pro Leu Lys Thr Gln Leu Arg Phe Gly Phe
    50                  55                  60
Leu Leu Met Val Leu Ala Val Ala Gly Leu Met Phe Ser His Ser Leu
65                  70                  75                  80
Ala Leu Phe Ser Ala Ala Met Phe Ile Leu Gly Val Val Ser Gly Ile
            85                  90                  95
Thr Met Ser Ile Gly Thr Phe Leu Val Thr Gln Met Tyr Glu Gly Arg
        100                 105                 110
Gln Arg Gly Ser Arg Leu Leu Phe Thr Asp Ser Phe Phe Ser Met Ala
        115                 120                 125
Gly Met Ile Phe Pro Met Ile Ala Ala Phe Leu Leu Ala Arg Ser Ile
        130                 135                 140
Glu Trp Tyr Trp Val Tyr Ala Cys Ile Gly Leu Val Tyr Val Ala Ile
145                 150                 155                 160
Phe Ile Leu Thr Phe Gly Cys Glu Phe Pro Ala Leu Cys Ser His Ala
                165                 170                 175
Thr Lys Leu Gly Thr Ala Ser Ser Tyr Pro Ser Leu Asp Val Val Gln
        180                 185                 190
Leu Arg Thr Leu Asn Ala
        195         198
```

```
<210> 1032
<211> 138
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(138)
<223> X = any amino acid or stop code
```

```
<400> 1032
Met Ala Lys Val Gly Leu Lys Thr Glu His Tyr Asp Arg Tyr Pro His
```

```
 1                   5                   10                  15
Met Phe Ser Gly Gly Gln Arg Gln Arg Ile Ala Ile Ala Arg Gly Leu
            20                  25                  30
Met Leu Asp Pro Asp Val Val Ile Ala Asp Glu Pro Val Ser Ala Leu
            35                  40                  45
Asp Val Ser Val Arg Ala Gln Val Leu Asn Leu Met Met Asp Leu Gln
       50                  55                  60
Gln Glu Leu Gly Leu Ser Tyr Val Phe Ile Ser His Asp Leu Ser Val
65                  70                  75                  80
Val Glu His Ile Ala Asp Glu Val Met Val Met Tyr Leu Gly Arg Cys
                85                  90                  95
Val Glu Lys Gly Thr Lys Asp Gln Ile Phe Asn Asn Pro Arg His Pro
            100                 105                 110
Tyr Thr Gln Ala Leu Leu Ser Ala Thr Pro Arg Leu Asn Pro Asp Asp
            115                 120                 125
Arg Arg Glu Arg Ile Lys Leu Ser Xaa *
130                 135             137
```

```
<210> 1033
<211> 141
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1033
Ser Ala Thr Leu Glu Arg Val Leu Asn His Pro Asp Glu Thr Gln Ala
1                   5                   10                  15
Arg Arg Leu Met Thr Leu Glu Asp Ile Val Ser Gly Tyr Ser Asn Val
            20                  25                  30
Leu Ile Ser Leu Ala Asp Ser Gln Gly Lys Thr Val Tyr His Ser Pro
       35                  40                  45
Gly Ala Pro Asp Ile Arg Glu Phe Thr Arg Asp Ala Ile Pro Asp Lys
       50                  55                  60
Asp Ala Gln Gly Gly Glu Val Tyr Leu Leu Ser Gly Pro Thr Met Met
65                  70                  75                  80
Met Pro Gly His Gly His Gly His Met Glu His Ser Asn Trp Arg Met
                85                  90                  95
Ile Asn Leu Pro Val Gly Pro Leu Val Asp Gly Lys Pro Ile Tyr Thr
            100                 105                 110
Leu Tyr Ile Ala Leu Ser Ile Asp Phe His Leu His Tyr Ile Asn Asp
            115                 120                 125
Leu Met Asn Lys Leu Ile Met Thr Ala Ser Val Ile Ile
       130                 135                 140 141
```

```
<210> 1034
<211> 112
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1034
Val Leu Ala Tyr Pro Gly Ile Lys Val Ser Thr Ala Glu Ala Arg Ala
1                   5                   10                  15
Ile Leu Pro Ala Gln Tyr Arg Arg Gln Asp Cys Ile Ala His Gly Arg
            20                  25                  30
His Leu Ala Gly Phe Ile His Ala Cys Tyr Ser Arg Gln Pro Glu Leu
```

```
               35                    40                    45
Ala Ala Lys Leu Met Lys Asp Val Ile Ala Glu Pro Tyr Arg Glu Arg
    ·50                    55                    60
Leu Leu Pro Gly Phe Arg Gln Ala Arg Gln Ala Val Ala Glu Ile Gly
  65                    70                    75                    80
Ala Val Ala Ser Gly Ile Ser Gly Ser Gly Pro Thr Leu Phe Ala Leu
                    85                    90                    95
Cys Asp Lys Pro Glu Thr Ala Gln Arg Val Ala Asp Trp Leu Gly Lys
               100                   105                   110   112
```

```
       <210> 1035
       <211> 92
       <212>Amino acid
       <213> Homo sapiens
```

```
       <400> 1035
Gly Gln Gln Gln Arg Val Ala Leu Ala Arg Ala Leu Ile Leu Lys Pro
 1                    5                    10                   15
Lys Val Leu Leu Phe Asp Glu Pro Leu Ser Asn Leu Asp Ala Asn Leu
                    20                    25                    30
Arg Arg Ser Met Arg Asp Lys Ile Arg Glu Leu Gln Lys Gln Phe Asp
               35                    40                    45
Ile Thr Ser Leu Tyr Val Thr His Asp Gln Ser Glu Ala Phe Ala Val
    50                    55                    60
Ser Asp Thr Val Leu Val Met Asn Lys Gly His Ile Met Gln Ile Gly
  65                    70                    75                   ·80
Ser Pro Gln Asp Leu Arg Val Arg Arg Leu Asn Trp
                    85                    90    92
```

```
       <210> 1036
       <211> 51
       <212>Amino acid
       <213> Homo sapiens
```

```
       <400> 1036
Ala Val His Tyr Leu Glu Arg Val Arg Ile Ala Glu His Ala His Lys
 1                    5                    10                   15
Phe Pro Gly Gln Ile Ser Gly Gly Gln Gln Gln Arg Val Ala Ile Ala
                    20                    25                    30
Arg Ser Leu Cys Met Lys Pro Lys Ile Met Leu Phe Asp Glu Pro Thr
               35                    40                    45
Ser Ala Leu
  50  51
```

```
       <210> 1037
       <211> 72
       <212>Amino acid
       <213> Homo sapiens
```

<400> 1037
Ala Pro Tyr Asp Ala Glu Asn Tyr Phe Asp Tyr Asp Asn Leu Asn Asn
1   5   10   15
Gly Pro Ser Leu Gln His Trp Phe Gly Val Asp Ser Leu Gly Arg Asp
            20   25   30
Ile Phe Ser Arg Val Leu Val Gly Ala Gln Ile Ser Leu Ala Ala Gly
        35   40   45
Val Phe Ala Val Phe Ile Gly Ala Ala Ile Gly Thr Leu Leu Gly Leu
    50   55   60
Leu Ala Gly Tyr Tyr Glu Gly Trp
65   70   72

        <210> 1038
        <211> 188
        <212>Amino acid
        <213> Homo sapiens

        <400> 1038
Val Phe Cys Leu Ile Ala Asp Leu Asp Pro Ile Asp Glu Leu Val Asp
1   5   10   15
Phe Pro Ile Val Tyr Ala Ser Ala Leu Asn Gly Ile Ala Gly Leu Asp
            20   25   30
His Glu Asp Met Ala Glu Asp Met Thr Pro Leu Tyr Gln Ala Ile Val
        35   40   45
Asp His Val Pro Ala Pro Asp Val Asp Leu Asp Gly Pro Phe Gln Met
    50   55   60
Gln Ile Ser Gln Leu Asp Tyr Asn Ser Tyr Val Gly Val Ile Gly Ile
65   70   75   80
Gly Arg Ile Lys Arg Gly Lys Val Lys Pro Asn Gln Gln Val Thr Ile
            85   90   95
Ile Asp Ser Glu Gly Lys Thr Arg Asn Ala Lys Val Gly Lys Val Leu
        100   105   110
Gly His Leu Gly Leu Glu Arg Ile Glu Thr Asp Leu Ala Glu Ala Gly
        115   120   125
Asp Ile Val Ala Ile Thr Gly Leu Gly Glu Leu Asn Ile Ser Asp Thr
    130   135   140
Val Cys Asp Thr Gln Asn Val Glu Ala Leu Pro Ala Leu Ser Val Asp
145   150   155   160
Glu Pro Thr Val Ser Met Phe Phe Cys Val Asn Thr Ser Pro Phe Cys
                165   170   175
Gly Lys Glu Gly Lys Phe Val Thr Ser Arg Gln Ile
            180   185   188

        <210> 1039
        <211> 122
        <212>Amino acid
        <213> Homo sapiens

        <400> 1039
Gln Gly Thr Arg Ala Glu Ser Gln Gly Ser Ser Lys Asp Lys Thr Arg
1   5   10   15
Leu Ala Phe Ala Gly Leu Lys Phe Gly Asp Tyr Gly Ser Ile Asp Tyr

```
                   •    20                    25                    30
Gly Arg Asn Tyr Gly Val Ala Tyr Asp Ile Gly Ala Trp Thr Asp Val
            35              40                    45
Leu Pro Glu Phe Gly Gly Asp Thr Trp Thr Gln Thr Asp Val Phe Met
        50                  55                    60
Thr Gln Arg Ala Thr Gly Val Ala Thr Tyr Arg Asn Asn Asp Phe Phe
65                  70                    75                    80
Gly Leu Val Asp Gly Leu Asn Phe Ala Ala Gln Tyr Gln Gly Lys Asn
                85                    90                    95
Asp Arg Ser Asp Phe Asp Asn Tyr Thr Glu Gly Asn Gly His Gly Phe
            100                   105                   110
Gly Phe Ser Ala Thr Tyr Glu Tyr Glu Gly
            115                   120   122
```


        <210> 1040
        <211> 65
        <212>Amino acid
        <213> Homo sapiens

        <400> 1040
```
Asp Thr Tyr Ser Val Ser Ile Pro Leu Gly Ala Thr Ile Asn Met Ala
1                   5                   10                    15
Gly Ala Ala Ile Thr Ile Thr Val Leu Thr Leu Ala Ala Val Asn Thr
                20                    25                   ·30
Leu Gly Ile Pro Val Asp Leu Pro Thr Ala Leu Leu Leu Ser Val Val
            35                    40                    45
Ala Ser Leu Cys Ala Cys Gly Ala Ser Gly Val Ala Gly Gly Ser Leu
    50                    55             ·        60
Leu
65
```


        <210> 1041
        <211> 46
        <212>Amino acid
        <213> Homo sapiens

        <400> 1041
```
Ala Asn Ala Gln Gln Gly Leu Pro Ser Gly Ile Thr Leu Lys Leu Asn
1   .                5                   10         ·          15
Asn Leu Val Asp Lys Gly Leu Val Asp Arg Leu Tyr Ala Ala Ser Ser
                20                    25                   30
Ser Gly Val Pro Val Asn Leu Leu Val Arg Gly Thr Cys Ser
            35                    40                   45  46
```


        <210> 1042
        <211> 146
        <212>Amino acid
        <213> Homo sapiens

<400> 1042

```
Ala Arg Met Thr Leu Ile Pro Gly Thr His Leu Leu Glu Asn Ile His
1               5                   10                  15
Asn Ile Trp Val Asn Gly Val Gly Thr Asn Ser Ala Pro Phe Trp Arg
            20                  25                  30
Met Leu Leu Asn Ser Phe Val Met Ala Phe Ser Ile Thr Leu Gly Lys
        35                  40                  45
Ile Thr Val Ser Met Leu Ser Ala Phe Ala Ile Val Trp Phe Arg Phe
    50                  55                  60
Pro Leu Arg Asn Leu Phe Phe Trp Met Ile Phe Ile Thr Leu Met Leu
65                  70                  75                  80
Pro Val Glu Val Arg Ile Phe Pro Thr Val Glu Val Ile Ala Asn Leu
            85                  90                  95
Gln Met Leu Asp Ser Tyr Ala Gly Leu Thr Leu Pro Leu Met Ala Ser
            100                 105                 110
Ala Thr Ala Thr Phe Leu Phe Arg Lys Leu Asn Met Ser Gly Pro Asp
        115                 120                 125
Lys Val Val Pro Ala Ala Arg Ile Ser Gly Tyr Gly Pro Arg Val Arg
    130                 135                 140
Lys Gln
145 146
```

<210> 1043
<211> 133
<212>Amino acid
<213> Homo sapiens

<400> 1043

```
Cys Ala Lys Cys Leu Arg Asp Ala Asp Glu Cys Pro Ser Gly Ala Phe
1               5                   10                  15
Glu Arg Ile Gly Arg Asp Ile Ser Leu Asp Ala Leu Glu Arg Glu Val
            20                  25                  30
Met Lys Asp Asp Ile Phe Phe Arg Thr Ser Gly Gly Gly Val Thr Leu
        35                  40                  45
Ser Gly Gly Glu Val Leu Met Gln Ala Glu Phe Ala Thr Arg Phe Leu
    50                  55                  60
Gln Arg Leu Arg Leu Trp Gly Val Ser Cys Ala Ile Glu Thr Ala Gly
65                  70                  75                  80
Asp Ala Pro Ala Ser Lys Leu Leu Pro Leu Ala Lys Leu Cys Asp Glu
            85                  90                  95
Val Leu Phe Asp Leu Lys Ile Met Asp Ala Thr Gln Ala Arg Asp Val
            100                 105                 110
Val Lys Met Asn Leu Pro Arg Val Leu Glu Asn Leu Arg Leu Leu Val
        115                 120                 125
Ser Glu Gly Val Asn
130             133
```

<210> 1044
<211> 115
<212>Amino acid
<213> Homo sapiens

<400> 1044

```
Tyr Leu Leu Leu Phe Val Cys Phe Leu Val Met Ser Leu Leu Val Gly
```

571

```
1                    5                  10                  15
Leu Val Tyr Lys Phe Thr Ala Glu Arg Ala Gly Lys Gln Ser Leu Asp
            20                     25                  30
Asp Leu Met Asn Ser Ser Leu Tyr Leu Met Arg Ser Glu Leu Arg Glu
        35                     40                  45
Ile Pro Pro His Asp Trp Gly Lys Thr Leu Lys Glu Met Asp Leu Asn
    50                     55                  60
Leu Ser Phe Asp Leu Arg Val Glu Pro Leu Ser Lys Tyr His Leu Asp
65                     70                     75                  80
Asp Ile Ser Met His Arg Leu Arg Gly Gly Glu Ile Val Ala Leu Asp
                85                     90                  95
Asp Gln Tyr Thr Phe Leu Gln Arg Ile Pro Arg Ser His Tyr Val Leu
            100                    105                 110
Ala Val Gly
        115


        <210> 1045
        <211> 69
        <212>Amino acid
        <213> Homo sapiens




        <400> 1045
Val Glu Leu Phe Leu Ser Asp Glu Gly Asp Asp Val Val Ile Glu Val
1                    5                  10                  15
Ala Asp Gln Gly Cys Gly Val Pro Glu Ser Leu Arg Asp Lys Ile Phe
            20                     25                  30
Glu Gln Gly Val Ser Thr Arg Ala Asp Glu Pro Gly Glu His Gly Ile
        35                     40                  45
Gly Leu Tyr Leu Ile Ala Ser Tyr Val Thr Arg Cys Gly Gly Val Ile
    50                     55                  60
Thr Leu Glu Asp Asn
65                 69


        <210> 1046
        <211> 69
        <212>Amino acid
        <213> Homo sapiens




        <400> 1046
Asp Ala Ile Ile Ala Pro Asp Ala Asn Ala Leu Pro Ala Ala Ala Gln
1                    5                  10                  15
Ala Ala Glu Asn Leu Lys Asn Asp Lys Val Ala Ile Val Gly Phe Ser
            20                     25                  30
Thr Pro Asn Val Met Arg Pro Tyr Val Glu Arg Gly Thr Val Lys Glu
        35                     40                  45
Phe Gly Leu Trp Asp Val Val Gln Gln Gly Lys Ile Ser Val Tyr Val
    50                     55                  60
Ala Asp Ala Leu Gln
65                 69


        <210> 1047
        <211> 43
        <212>Amino acid
```

572

<213> Homo sapiens

<400> 1047
Tyr Ile Val Val Thr Gly Lys Thr His Cys Gly Thr Pro Leu Thr Thr
1   5   10   15
Val Thr Gly Asp Ala Thr Gln Ser Gly Tyr Leu Thr Leu Asn Leu Pro
            20   25   30
Glu Met Trp Glu Val Ser Gly Tyr Asn Arg Val
            35   40   43

<210> 1048
<211> 77
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(77)
<223> X = any amino acid or stop code

<400> 1048
Xaa Glu Gly Val Glu Pro Asp Ile Asn Ala Ser Lys Thr Arg Gln Gln
1   5   10   15
Leu Asn Asp Val Ala Gly Lys Met Lys Ile Ile Glu Ala Arg Leu Ser
            20   25   30
Ala Leu Thr Asn Asn Gln Thr Lys Ser Leu Lys Leu Asn Pro Val Ala
            35   40   45
Leu Pro Lys Val Ala Ser Gln Leu Leu Asp Glu Leu Gly Tyr Ser Leu
        50   55   60
Leu Ala Arg Arg Ala Asp Leu Gln Ser Ala His Xaa *
65   70   75 76

<210> 1049
<211> 79
<212> Amino acid
<213> Homo sapiens

<400> 1049
Glu Asn Ile Ala Glu Glu Tyr Ala Thr Lys Arg Tyr Arg Ser Asn Val
1   5   10   15
Ile Asn Trp Gly Met Leu Pro Leu Gln Met Ala Glu Val Pro Thr Phe
            20   25   30
Glu Val Gly Asp Tyr Ile Tyr Ile Pro Gly Ile Lys Ala Ala Leu Asp
            35   40   45
Asn Pro Gly Thr Thr Phe Lys Gly Tyr Val Ile His Glu Asp Ala Pro
        50   55   60
Val Thr Glu Ile Thr Leu Tyr Met Glu Ser Gln Glu Ala Arg Thr
65   70   75   79

573

```
<210> 1050
<211> 99
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1050
Leu Gln Thr Glu Ile Gly Ser Met Val Tyr Ala Val Lys Pro Gly Asp
1               5                   10                  15
Gly Ser Ala Arg Glu Gln Ala Ala Ser Cys Gln Arg Val Ile Gly Gly
            20                  25                  30
Leu Ala Asn Ile Ala Glu Glu Tyr Ala Thr Lys Arg Tyr Arg Ser Asn
        35                  40                  45
Val Ile Asn Trp Gly Met Leu Pro Leu Gln Met Ala Glu Val Pro Thr
    50                  55                  60
Phe Glu Val Gly Asp Tyr Ile Tyr Ile Leu Gly Phe Lys Ala Ala Lys
65                  70                  75                  80
Tyr Ser Pro Gly Thr Ala Phe Thr Val Tyr Ala Ile Ser Gly Tyr Gly
                85                  90                  95
Pro Arg Ile
        99
```

```
<210> 1051
<211> 114
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1051
Thr Leu Glu Asp Leu Leu Met Ala Leu Asp Gly Glu Gln His Leu Gln
1               5                   10                  15
Gln Gln Val Ser Glu Lys Val Leu Ala Asp Asn Val Leu Ile Ala Pro
            20                  25                  30
Gly Ser Val Lys Pro Asp Ala Thr Phe Trp Ser Ala Leu Ile Gln Asp
        35                  40                  45
Arg Tyr Asn Val Met Thr Cys Ile Glu Lys Asp Ala Cys Val Leu Val
    50                  55                  60
Glu Gln Asp Leu Asn Ser Asp Gly Gln Ala Glu Arg Ile Leu Phe Ala
65                  70                  75                  80
Phe Asn Asp Asp Arg Val Ile Val Tyr Gly Phe Asp Ser Asp Arg Lys
                85                  90                  95
Glu Trp Asp Ala Leu Asp Met Ser Leu Leu Pro Asn Glu Ile Thr Lys
                100                 105                 110
Glu Lys
114
```

```
<210> 1052
<211> 210
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1052
```

```
Glu Ser Asn Ser Arg Cys Arg Lys Met Pro Gly Glu Arg Cys Arg Gly
1               5                   10                  15
Gly Pro Ala Arg Leu Ser Leu Leu Leu Asp Leu Pro Thr Arg Pro Leu
            20                  25                  30
Pro His Pro Arg Gln Val Ile Asp Phe Gly Ser Ala Ser Ile Phe Ser
            35                  40                  45
Glu Val Arg Tyr Val Lys Glu Pro Tyr Ile Gln Ser Arg Phe Tyr Arg
    50                  55                  60
Ala Pro Glu Ile Leu Leu Gly Leu Pro Phe Cys Glu Lys Val Asp Val
65                  70                  75                      80
Trp Ser Leu Gly Cys Val Met Asp Glu Leu His Leu Gly Trp Pro Leu
            85                  90                  95
Tyr Pro Gly Asn Asn Glu Tyr Asp Gln Val Arg Tyr Ile Cys Glu Thr
            100                 105                 110
Gln Gly Leu Pro Lys Pro His Leu Leu His Ala Ala Cys Lys Ala His
            115                 120                 125
His Phe Phe Lys Arg Asn Pro His Pro Asp Ala Ala Asn Pro Trp Gln
            130                 135                 140
Leu Lys Ser Ser Ala Asp Tyr Leu Ala Glu Thr Lys Val Arg Pro Leu
145                 150                 155                 160
Glu Arg Arg Lys Tyr Met Leu Lys Ser Leu Asp Gln Ile Glu Thr Val
                165                 170                 175
Asn Gly Gly Ser Val Ala Ser Arg Leu Thr Phe Pro Asp Arg Glu Ala
            180                 185                 190
Leu Ala Glu His Ala Asp Leu Lys Ser Met Val Glu Leu Met Lys Arg
    195                 200                 205
Leu Leu
210
```

```
            <210> 1053
            <211> 100
            <212>Amino acid
            <213> Homo sapiens
```

```
            <400> 1053
Arg Leu Val Lys Lys Arg Val Glu Cys Arg Gln Cys Gly Lys Ala Gly
1               5                   10                  15
Arg Asn Gln Ser Thr Leu Lys Thr His Met Arg Ser His Thr Gly Glu
            20                  25                  30
Lys Pro Tyr Glu Cys Asp His Cys Gly Lys Ala Phe Ser Ile Gly Ser
            35                  40                  45
Asn Leu Asn Val His Arg Arg Ile His Thr Gly Glu Lys Pro Tyr Glu
    50                  55                  60
Cys Leu Val Cys Gly Glu Ala Phe Ser Asp His Ser Ser Leu Arg Ser
65                  70                  75                      80
His Val Lys Thr His Arg Gly Glu Lys Leu Phe Val Ser Ser Val Trp
            85                  90                  95
Lys Arg Leu Gln
            100
```

```
            <210> 1054
          , <211> 194
            <212>Amino acid
            <213> Homo sapiens
```

<400> 1054

Cys	Gly	Pro	Gly	Phe	Ser	Leu	Ser	Phe	Phe	Phe	Leu	Arg	Trp	Ser	Phe
1				5					10					15	

Ala Leu Val Ala Gln Ala Gly Val Gln Trp His Asp Leu Gly Ser Leu
        20   25   30

Gln Pro Pro Ala Pro Gly Phe Lys Arg Phe Ser Ser Leu Ser Leu Leu
        35   40   45

Ser Arg Trp Asp Tyr Arg His Ala His Ala Arg Leu Ile Phe Val Phe
    50   55   60

Leu Val Glu Met Gly Phe Leu His Val Gly Gln Ala Gly Leu Glu Leu
65   70   75   80

Pro Thr Ser Gly Asp Pro Pro Thr Ser Ala Ser Gln Ser Ala Arg Ile
                85   90   95

Thr Gly Val Thr Thr Pro Leu Gly Thr Phe Phe Phe Phe Leu Arg Trp
                100   105   110

Ser Phe Ala Leu Val Ala Gln Ala Gly Gly Gln Cys Leu Asp Leu Gly
        115   120   125

Ser Leu Gln Leu Pro Pro Pro Gly Phe Lys Arg Leu Val Cys His Phe
    130   135   140

Gln Thr Pro Gln Lys His Arg Cys Ser Cys Gln Ala Pro Gly Asp Cys
145   150   155   160

Leu Gln Glu Ser Phe Val Met Thr Gly Cys Val Leu Arg Thr Val Ser
                165   170   175

Glu Ser Val Gln Arg Ala Asn Ala Gly Ala Gly Ala Glu Thr Val Gln
                180   185   190

Gly Leu
194

<210> 1055
<211> 351
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(351)
<223> X = any amino acid or stop code

<400> 1055

Met Gly Asn Ala Ala Ala Ala Lys Lys Gly Ser Glu Gln Glu Ser Val
1   5   10   15

Lys Glu Phe Leu Ala Lys Ala Lys Glu Asp Phe Leu Lys Lys Trp Glu
        20   25   30

Ser Pro Ala Gln Asn Thr Ala His Leu Asp Gln Phe Glu Arg Ile Lys
        35   40   45

Thr Leu Gly Thr Gly Ser Phe Gly Arg Val Met Leu Val Lys His Lys
    50   55   60

Glu Thr Gly Asn His Tyr Ala Met Lys Ile Leu Asp Xaa Gln Lys Val
65   70   75   80

Gly Lys Leu Lys Gln Ile Glu His Thr Leu Asn Glu Lys Arg Ile Leu
                85   90   95

Gln Ala Val Asn Phe Pro Phe Leu Val Lys Leu Glu Phe Ser Phe Lys
                100   105   110

Asp Asn Ser Asn Leu Tyr Met Val Met Glu Tyr Val Pro Gly Gly Glu
        115   120   125

Met Phe Ser His Leu Arg Arg Ile Gly Arg Phe Ser Glu Pro His Ala
        130   135   140

Arg Phe Tyr Ala Ala Gln Ile Val Leu Thr Phe Glu Tyr Leu His Ser

```
145                    150                    155                    160
Leu Asp Leu Ile Tyr Arg Asp Leu Lys Pro Glu Asn Leu Leu Ile Asp
                165                    170                    175
Gln Gln Gly Tyr Ile Gln Val Thr Asp Phe Gly Phe Ala Lys Arg Val
            180                    185                    190
Lys Gly Arg Thr Trp Thr Leu Cys Gly Thr Pro Glu Tyr Leu Ala Pro
        195                    200                    205
Glu Ile Ile Leu Ser Lys Gly Tyr Asn Lys Ala Val Asp Trp Trp Ala
    210                    215                    220
Leu Gly Val Leu Ile Tyr Glu Met Ala Ala Gly Tyr Pro Pro Phe Phe
225                    230                    235                    240
Ala Asp Gln Pro Ile Gln Ile Tyr Glu Lys Ile Val Ser Gly Lys Val
                245                    250                    255
Arg Phe Pro Ser His Phe Ser Ser Asp Leu Lys Asp Leu Leu Arg Asn
            260                    265                    270
Leu Leu Gln Val Asp Leu Thr Lys Arg Phe Gly Asn Leu Lys Asn Gly
        275                    280                    285
Val Asn Asp Ile Lys Asn His Lys Trp Phe Ala Thr Thr Asp Trp Ile
    290                    295                    300
Ala Ile Tyr Gln Arg Lys Val Glu Ala Pro Phe Ile Pro Lys Phe Lys
305                    310                    315                    320
Gly Pro Gly Asp Thr Ser Asn Phe Asp Asp Tyr Glu Glu Glu Glu Ile
                325                    330                    335
Arg Val Ser Ile Asn Glu Lys Phe Gly Lys Glu Phe Ser Glu Phe
            340                    345                    350 351


        <210> 1056
        <211> 136
        <212> Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(136)
        <223> X = any amino acid or stop code




        <400> 1056
Ser Ser Ser Arg Ser Ser His Gly Asp Ser Pro Pro His Ser Gln Thr
  1           5                   10                  15
Pro Cys Asp Thr Asn Arg Gly Leu Asp Thr Lys His Xaa Asp Ser Gln
            20                  25                  30
Ser Ile Glu Glu Lys Asp Ser Ser Gln Ser Glu Xaa Asn Arg Ile Glu
        35                  40                  45
Arg Arg Lys Glu Val Glu Arg Ile Leu Gln Thr Asn Ser Asp Tyr Met
    50                  55                  60
Xaa His Trp Ser Asn Xaa Pro Glu Asn Ile Leu Pro Lys Lys Phe Phe
65                  70                  75                  80
Ser Lys His Gln Lys Cys Thr Ala Thr Leu Ser Met Arg Asn Thr Ser
            85                  90                  95
Ile Met Lys Lys Glu Gly Leu Phe Xaa Ala Gln Phe Pro Ser Leu Leu
        100                 105                 110
Leu Ser His Leu Pro Ala Val Gly Leu Gly Ile Tyr Thr Gly Thr His
    115                 120                 125
Leu Thr Thr Ser Thr Ser Thr Phe
130                 135 136


        <210> 1057
        <211> 79
```

<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(79)
<223> X = any amino acid or stop code

<400> 1057

Thr	Phe	His	Ser	Ser	Leu	Glu	Lys	Asn	Ile	Leu	Gln	Pro	Cys	Arg	Xaa
1				5					10					15	

| Arg | Arg | Ala | Ile | Cys | Leu | Pro | Leu | Leu | Leu | Xaa | Pro | Ser | Val | Pro | Leu |
| | | | 20 | | | | | 25 | | | | 30 | | | |

Thr Phe His Ser Ser Leu Glu Lys Asn Ile Leu Gln Pro Cys Arg Xaa
1   5   10   15
Arg Arg Ala Ile Cys Leu Pro Leu Leu Leu Xaa Pro Ser Val Pro Leu
            20   25   30
Leu Ala Pro Gln Tyr Phe Ser Asp Leu Arg Asn Ser Ile Val Asn Ser
        35   40   45
Gln Pro Pro Glu Lys Gln Gln Ala Met His Leu Cys Phe Glu Asn Leu
    50   55   60
Met Glu Gly Ile Glu Arg Asn Leu Leu Thr Lys Asn Arg Asp Arg
65   70   75   79

<210> 1058
<211> 458
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(458)
<223> X = any amino acid or stop code

<400> 1058

Gly Thr Ser Gly Val Gln Gln Glu Ile Ser Arg Leu Thr Asn Glu Asn
1   5   10   15
Leu Asp Leu Lys Glu Leu Val Glu Lys Leu Glu Lys Asn Glu Arg Lys
            20   25   30
Leu Lys Lys Gln Leu Lys Ile Tyr Met Lys Lys Ala Gln Asp Leu Glu
        35   40   45
Ala Ala Gln Ala Leu Ala Gln Ser Glu Arg Lys Arg His Glu Leu Asn
    50   55   60
Arg Gln Val Thr Val Gln Arg Lys Glu Lys Asp Phe Gln Gly Met Leu
65   70   75   80
Glu Tyr His Lys Glu Asp Glu Ala Leu Leu Ile Arg Asn Leu Val Thr
            85   90   95
Asp Leu Lys Pro Gln Met Leu Ser Gly Thr Val Pro Cys Leu Pro Ala
        100   105   110
Tyr Ile Leu Tyr Met Cys Ile Arg His Ala Asp Tyr Thr Asn Asp Asp
    115   120   125
Leu Lys Val His Ser Leu Leu Thr Ser Thr Ile Asn Gly Ile Lys Lys
    130   135   140
Val Leu Lys Lys His Asn Asp Asp Phe Glu Met Thr Ser Phe Trp Leu
145   150   155   160
Ser Asn Thr Cys Arg Leu Leu His Cys Leu Lys Gln Tyr Ser Gly Asp
            165   170   175
Glu Gly Phe Met Thr Gln Asn Thr Ala Lys Gln Asn Glu His Cys Leu
            180   185   190

578

```
Lys Asn Phe Asp Leu Thr Glu Tyr Arg Gln Val Leu Ser Asp Leu Ser
        195                 200                 205
Ile Gln Ile Tyr Gln Gln Leu Ile Lys Ile Ala Glu Gly Val Leu Gln
    210                 215                 220
Pro Met Ile Val Ser Ala Met Leu Glu Asn Xaa Ser Ile Gln Gly Leu
225                 230                 235                     240
Ser Gly Val Lys Pro Thr Gly Ser Gln Lys His Ser Ser Ser Met Ala
            245                 250                 255
Asp Glu Asp Asn Ser Tyr Arg Leu Glu Ala Ile Ile Arg Gln Met Asn
        260                 265                 270
Ala Phe His Thr Val Met Cys Asp Gln Gly Leu Asp Pro Glu Ile Ile
        275                 280                 285
Leu Gln Val Phe Lys Gln Leu Phe Tyr Met Ile Asn Ala Val Thr Leu
        290                 295                 300
Asn Asp Leu Leu Leu Arg Lys Asp Val Cys Ser Trp Ser Thr Gly Met
305                 310                 315                     320
Gln Leu Arg Tyr Asn Ile Ser Gln Leu Glu Glu Trp Leu Arg Gly Arg
            325                 330                 335
Asn Leu His Gln Ser Gly Ala Val Gln Thr Met Glu Pro Leu Ile Gln
        340                 345                 350
Ala Ala Gln Leu Leu Gln Leu Lys Lys Lys Thr Gln Glu Asp Ala Glu
        355                 360                 365
Ala Ile Cys Ser Leu Cys Thr Ser Leu Ser Thr Gln Gln Ile Val Lys
    370                 375                 380
Ile Leu Asn Leu Tyr Thr Pro Leu Asn Glu Phe Glu Glu Arg Val Thr
385                 390                 395                     400
Val Ala Phe Ile Arg Thr Ile Gln Ala Gln Leu Gln Glu Arg Asn Asp
            405                 410                 415
Pro Gln Gln Leu Leu Leu Asp Ala Lys His Met Phe Pro Val Leu Phe
            420                 425                 430
Pro Phe Asn Pro Ser Ser Leu Thr Met Asp Ser Ile His Ile Pro Ala
            435                 440                 445
Cys Leu Asn Leu Glu Phe Leu Asn Glu Val
    450                 455         458
```

```
<210> 1059
<211> 82
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(82)
<223> X = any amino acid or stop code
```

```
        <400> 1059
His Glu Glu Asn Thr Ile Leu Lys Ala Ala Glu Val Gln Val Pro Pro
1               5               10                  15
Lys Xaa Val Val Thr Pro Glu Ala Lys Ala Phe Ile Xaa Arg Cys Leu
        20                  25                  30
Ala Tyr Gln Lys Glu Asp Cys Ile Asp Ala Gln Gln Leu Ala Cys Asp
        35                  40                  45
Pro Tyr Leu Leu His Tyr Ile Gln Lys Leu Val Phe Val Ser Ser Pro
    50                  55                  60
Ala Gly Ala Ala Ile Ala Ser Thr Phe Gly Val Ser Asn Ser Cys Ser
65                  70                  75                  80
Ser Asn
    82
```

```
<210> 1060
<211> 277
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 1060
Gly Thr Thr Asp Glu Ile Met Thr Arg Trp Ala Arg Val Ser Thr Thr
 1               5                  10                  15
Tyr Asn Lys Arg Pro Leu Pro Ala Thr Ser Trp Glu Asp Met Lys Lys
            20                  25                  30
Gly Ser Phe Glu Gly Thr Ser Gln Asn Leu Pro Lys Arg Lys Gln Leu
        35                  40                  45
Glu Ala Asn Arg Leu Ser Leu Lys Asn Asp Ala Pro Gln Ala Lys His
        50                  55                  60
Lys Lys Asn Lys Lys Lys Lys Glu Tyr Leu Asn Glu Asp Val Asn Gly
 65                  70                  75                  80
Phe Met Glu Tyr Leu Arg Gln Asn Ser Gln Met Val His Asn Gly Gln
                85                  90                  95
Ile Ile Ala Thr Asp Ser Glu Glu Val Arg Glu Glu Ile Ala Val Ala
            100                 105                 110
Leu Lys Lys Asp Ser Arg Arg Glu Gly Arg Arg Leu Lys Arg Gln Ala
            115                 120                 125
Ala Lys Lys Asn Ala Met Val Cys Phe His Cys Arg Lys Pro Gly His
            130                 135                 140
Gly Ile Ala Asp Cys Pro Ala Ala Leu Glu Asn Gln Asp Met Gly Thr
145                 150                 155                 160
Gly Ile Cys Tyr Arg Cys Gly Ser Thr Glu His Glu Ile Thr Lys Cys
                165                 170                 175
Lys Ala Lys Val Asp Pro Ala Leu Gly Glu Phe Pro Phe Ala Lys Cys
            180                 185                 190
Phe Val Cys Gly Glu Met Gly His Leu Ser Arg Ser Cys Pro Asp Asn
        195                 200                 205
Pro Lys Gly Leu Tyr Ala Asp Gly Gly Gly Cys Lys Leu Cys Gly Ser
    210                 215                 220
Val Glu His Leu Lys Lys Asp Cys Pro Glu Ser Gln Asn Ser Glu Arg
225                 230                 235                 240
Met Val Thr Val Gly Arg Trp Ala Lys Gly Met Ser Ala Asp Tyr Glu
                245                 250                 255
Glu Ile Leu Asp Val Pro Lys Pro Gln Lys Pro Lys Thr Lys Ile Pro
            260                 265                 270
Lys Val Val Asn Phe
            275     277
```

```
<210> 1061
<211> 95
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(95)
<223> X = any amino acid or stop code
```

```
<400> 1061
```

```
Asp His Val Arg Lys Ser Leu Leu Lys Asn Arg Ala Glu Asn Ile Val
1               5                   10                  15
Asn Ile Phe Lys Cys Asn Val Val Ser Leu Pro Asn Leu Pro Ala Phe
            20                  25                  30
Gly Gln Ala Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp Glu Ala
        35                  40                  45
Glu Val Gly Gly Ser Xaa Gly Gln Glu Ile Glu Thr Ile Leu Ala Asn
    50                  55                  60
Ala Val Lys Ser Pro Phe Leu Leu Lys Ile Gln Lys Lys Lys Ile Ser
65                  70                  75                  80
Arg Ala Trp Trp Arg Ala Pro Val Ser Pro Arg Tyr Ser Gly Gly
                85                  90                  95
```

<210> 1062
<211> 259
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(259)
<223> X = any amino acid or stop code

<400> 1062

```
Ser Asp Ala Trp Ala Asp Ala Trp Ala Arg Ser Leu Ser Val Ser Pro
1               5                   10                  15
Ser Ser Tyr Pro Glu Leu His Thr Glu Val Pro Leu Ser Val Leu Ile
            20                  25                  30
Leu Gly Leu Leu Val Val Phe Ile Leu Ser Val Cys Phe Gly Ala Gly
        35                  40                  45
Leu Phe Val Phe Val Leu Lys Arg Arg Lys Gly Val Pro Ser Val Pro
    50                  55                  60
Arg Asn Thr Asn Asn Leu Asp Val Ser Ser Phe Gln Leu Gln Tyr Gly
65                  70                  75                  80
Ser Tyr Asn Thr Glu Thr His Asp Lys Thr Asp Gly His Val Tyr Asn
                85                  90                  95
Tyr Ile Pro Pro Pro Val Val Gln Met Cys Gln Asn Pro Ile Tyr Met
                100                 105                 110
Ala Gly Arg Glu Gly Arg Pro Ser Ser Leu Leu Pro Lys Pro Gly Lys
        115                 120                 125
Glu Phe Gln Leu Leu Gly Asn Leu Glu Glu Lys Lys Glu Glu Pro Ala
    130                 135                 140
Thr Pro Ala Tyr Thr Ile Ser Ala Thr Glu Leu Leu Glu Lys Gln Ala
145                 150                 155                 160
Thr Pro Arg Glu Pro Glu Leu Leu Tyr Gln Asn Ile Ala Glu Pro Ser
                165                 170                 175
Gln Gly Thr Ser Thr Ala Gln Ala Xaa Ser Thr Ile Thr Phe Val Pro
                180                 185                 190
Tyr Leu Lys Gly Gln Phe Ala Pro Ser Tyr Glu Ser Arg Arg Gln Asn
        195                 200                 205
Gln Asp Arg Ile Asn Lys Thr Val Leu Tyr Gly Thr Pro Arg Lys Cys
    210                 215                 220
Phe Val Gly Gln Ser Lys Pro Asn His Pro Leu Leu Gln Ala Lys Pro
225                 230                 235                 240
Gln Ser Glu Pro Asp Tyr Leu Glu Val Leu Glu Lys Gln Thr Ala Ile
                245                 250                 255
Ser Gln Leu
        259
```

```
<210> 1063
<211> 498
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1063
Ala Leu Cys His Ile Ala Val Gly Gln Gln Met Asn Leu His Trp Leu
1               5                   10                  15
His Lys Ile Gly Leu Val Val Ile Leu Ala Ser Thr Val Val Ala Met
            20                  25                  30
Ser Ala Val Ala Gln Leu Trp Glu Asp Glu Trp Glu Val Leu Leu Ile
        35                  40                  45
Ser Leu Gln Gly Thr Ala Pro Phe Leu His Val Gly Ala Val Ala Ala
    50                  55                  60
Val Thr Met Leu Ser Trp Ile Val Ala Gly Gln Phe Ala Arg Ala Glu
65                  70                  75                  80
Arg Thr Ser Ser Gln Val Thr Ile Leu Cys Thr Phe Phe Thr Val Val
                85                  90                  95
Phe Ala Leu Tyr Leu Ala Pro Leu Thr Ile Ser Ser Pro Cys Ile Met
            100                 105                 110
Glu Lys Lys Asp Leu Gly Pro Lys Pro Ala Leu Ile Gly His Arg Gly
            115                 120                 125
Ala Pro Met Leu Ala Pro Glu His Thr Leu Met Ser Phe Arg Lys Ala
    130                 135                 140
Leu Glu Gln Lys Leu Tyr Gly Leu Gln Ala Asp Ile Thr Ile Ser Leu
145                 150                 155                 160
Asp Gly Val Pro Phe Leu Met His Asp Thr Thr Leu Arg Arg Thr Thr
                165                 170                 175
Asn Val Glu Glu Glu Phe Pro Glu Leu Ala Arg Arg Pro Ala Ser Met
            180                 185                 190
Leu Asn Trp Thr Thr Leu Gln Arg Leu Asn Ala Gly Gln Trp Phe Leu
        195                 200                 205
Lys Thr Asp Pro Phe Trp Thr Ala Ser Ser Leu Ser Pro Ser Asp His
    210                 215                 220
Arg Glu Ala Gln Asn Gln Ser Ile Cys Ser Leu Ala Glu Leu Leu Glu
225                 230                 235                 240
Leu Ala Lys Gly Asn Ala Thr Leu Leu Leu Asn Leu Arg Asp Pro Pro
                245                 250                 255
Arg Glu His Pro Tyr Arg Ser Ser Phe Ile Asn Val Thr Leu Glu Ala
            260                 265                 270
Val Leu His Ser Gly Phe Pro Gln His Gln Val Met Trp Leu Pro Ser
        275                 280                 285
Arg Gln Arg Pro Leu Val Arg Lys Val Ala Pro Gly Phe Gln Gln Thr
    290                 295                 300
Ser Gly Ser Lys Glu Ala Val Ala Ser Leu Arg Arg Gly His Ile Gln
305                 310                 315                 320
Arg Leu Asn Leu Arg Tyr Thr Gln Val Ser Arg Gln Glu Leu Arg Asp
                325                 330                 335
Tyr Ala Ser Trp Asn Leu Ser Val Asn Leu Tyr Thr Val Asn Ala Pro
            340                 345                 350
Trp Leu Phe Ser Leu Leu Trp Cys Ala Gly Val Pro Ser Val Thr Ser
        355                 360                 365
Asp Asn Ser His Thr Leu Ser Gln Val Pro Ser Pro Leu Trp Ile Met
    370                 375                 380
Pro Pro Asp Glu Tyr Cys Leu Met Trp Val Thr Ala Asp Leu Val Ser
385                 390                 395                 400
Phe Thr Leu Ile Val Gly Ile Phe Val Leu Gln Lys Trp Arg Leu Gly
                405                 410                 415
Gly Ile Arg Ser Tyr Asn Pro Glu Gln Ile Met Leu Ser Ala Ala Val
```

```
                    420                   425                    430
Arg Arg Thr Ser Arg Asp Val Ser Ile Met Lys Glu Lys Leu Ile Phe
        435                   440                    445
Ser Glu Ile Ser Asp Gly Val Glu Val Ser Asp Val Leu Ser Val Cys
    450                   455                    460
Ser Asp Asn Ser Tyr Asp Thr Tyr Ala Asn Ser Thr Ala Thr Pro Val
465                   470                    475                    480
Gly Pro Arg Gly Gly Gly Ser His Thr Lys Thr Leu Ile Glu Arg Ser
                485                   490                    495
Gly Arg
    498



    <210> 1064
    <211> 374
    <212>Amino acid
    <213> Homo sapiens




    <400> 1064
Asn Ser Ala Asp Tyr Gly Asp Gly Pro Asp Ser Ser Asp Ala Asp Pro
1           5                   10                    15
Asp Ser Gly Thr Glu Glu Gly Val Leu Asp Phe Ser Asp Pro Phe Ser
            20                   25                    30
Thr Glu Val Lys Pro Arg Ile Leu Leu Met Gly Leu Arg Arg Ser Gly
            35                   40                    45
Lys Ser Ser Ile Gln Lys Val Val Phe His Lys Met Ser Pro Asn Glu
    50                   55                    60
Thr Leu Phe Leu Glu Ser Thr Asn Lys Ile Cys Arg Glu Asp Val Ser
65                   70                    75                    80
Asn Ser Ser Phe Val Asn Phe Gln Ile Trp Asp Phe Pro Gly Gln Ile
                85                   90                    95
Asp Phe Phe Asp Pro Thr Phe Asp Tyr Glu Met Ile Phe Arg Gly Thr
            100                   105                    110
Gly Ala Leu Ile Phe Val Ile Asp Ser Gln Asp Asp Tyr Met Glu Ala
        115                   120                    125
Leu Ala Arg Leu His Leu Thr Val Thr Arg Ala Tyr Lys Val Asn Thr
    130                   135                    140
Asp Ile Asn Phe Glu Val Phe Ile His Lys Val Asp Gly Leu Ser Asp
145                   150                    155                    160
Asp His Lys Ile Glu Thr Gln Arg Asp Ile His Gln Arg Ala Asn Asp
                165                   170                    175
Asp Leu Ala Asp Ala Gly Leu Glu Lys Ile His Leu Ser Phe Tyr Leu
            180                   185                    190
Thr Ser Ile Tyr Asp His Ser Ile Phe Glu Ala Phe Ser Lys Val Val
    195                   200                    205
Gln Lys Leu Ile Pro Gln Leu Pro Thr Leu Glu Asn Leu Leu Asn Ile
    210                   215                    220
Phe Ile Ser Asn Ser Gly Ile Glu Lys Ala Phe Leu Phe Asp Val Val
225                   230                    235                    240
Ser Lys Ile Tyr Ile Ala Thr Asp Ser Thr Pro Val Asp Met Gln Thr
            245                   250                    255
Tyr Glu Leu Cys Cys Asp Met Ile Asp Val Val Ile Asp Ile Ser Cys
            260                   265                    270
Ile Tyr Gly Leu Lys Glu Asp Gly Ala Gly Thr Pro Tyr Asp Lys Glu
        275                   280                    285
Ser Thr Ala Ile Ile Lys Leu Asn Asn Thr Thr Val Leu Tyr Leu Lys
    290                   295                    300
Glu Val Thr Lys Phe Leu Ala Leu Val Cys Phe Val Arg Glu Glu Ser
305                   310                    315                    320
Phe Glu Arg Lys Gly Leu Ile Asp Tyr Asn Phe His Cys Phe Arg Lys
```

```
                        325                     330                     335
Ala Ile His Glu Val Phe Glu Val Arg Met Lys Val Val Lys Ser Arg
                340                     345                     350
Lys Val Gln Asn Arg Leu Gln Lys Lys Lys Arg Ala Thr Pro Asn Gly
                355                     360                     365
Thr Pro Arg Val Leu Leu
        370             374
```

```
        <210> 1065
        <211> 278
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1065
Arg Thr Arg Gly Arg Asp Pro Gly Ala Gly Phe Arg Arg Thr Ala Asn
 1               5                   10                  15
Lys Arg Cys Cys Arg Arg Arg Phe Leu Ile Gly Cys Gly Trp Leu Pro
            20                  25                  30
Leu Arg Ser Asp Trp Pro Leu Val Ser Lys Met Leu Ser Lys Gly Leu
        35                  40                  45
Lys Arg Lys Arg Glu Glu Glu Glu Lys Glu Pro Leu Ala Val Asp
    50              55                  60
Ser Trp Trp Leu Asp Pro Gly His Ala Ala Val Ala Gln Ala Pro Pro
65              70                  75                  80
Ala Val Ala Ser Ser Ser Leu Phe Asp Leu Ser Val Leu Lys Leu His
                85                  90                  95
His Ser Leu Gln Gln Ser Glu Pro Asp Leu Arg His Leu Val Leu Val
            100                 105                 110
Val Asn Thr Leu Arg Arg Ile Gln Ala Ser Met Ala Pro Ala Ala Ala
        115                 120                 125
Leu Pro Pro Val Pro Ser Pro Pro Ala Ala Pro Ser Val Ala Asp Asn
    130                 135                 140
Leu Leu Ala Ser Ser Asp Ala Ala Leu Ser Ala Ser Met Ala Ser Leu
145                 150                 155                 160
Leu Glu Asp Leu Ser His Ile Glu Gly Leu Ser Gln Ala Pro Gln Pro
                165                 170                 175
Leu Ala Asp Glu Gly Pro Pro Gly Arg Ser Ile Gly Gly Ala Ala Pro
            180                 185                 190
Ser Leu Gly Ala Leu Asp Leu Leu Gly Pro Ala Thr Gly Cys Leu Leu
        195                 200                 205
Asp Asp Gly Leu Glu Gly Leu Phe Glu Asp Ile Asp Thr Ser Met Tyr
    210                 215                 220
Asp Asn Glu Leu Trp Ala Pro Ala Ser Glu Gly Leu Lys Pro Gly Pro
225                 230                 235                 240
Glu Asp Gly Pro Gly Lys Glu Glu Ala Pro Glu Leu Asp Glu Ala Glu
                245                 250                 255
Leu Asp Tyr Leu Met Asp Val Leu Val Gly Thr Gln Ala Leu Glu Arg
            260                 265                 270
Pro Pro Gly Pro Gly Arg
    275             278
```

```
        <210> 1066
        <211> 502
        <212>Amino acid
        <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
```

584

<222> (1)...(502)
<223> X = any amino acid or stop code

<400> 1066
```
Leu Gln Glu Val Lys Ala Arg Arg Asn Thr Leu His Lys Glu Lys Asp
 1               5                  10                  15
His Leu Val Asn Asp Tyr Glu Gln Asn Met Lys Leu Leu Gln Thr Lys
            20                  25                  30
Tyr Asp Ala Asp Ile Asn Leu Leu Lys Gln Glu His Ala Leu Ser Ala
            35                  40                  45
Ser Lys Ala Ser Ser Met Ile Glu Glu Leu Glu Gln Asn Val Cys Gln
    50                  55                  60
Leu Lys Gln Gln Leu Gln Glu Ser Glu Leu Gln Arg Lys Gln Gln Leu
65                  70                  75                  80
Arg Asp Gln Glu Asn Lys Phe Gln Met Glu Lys Ser His Leu Lys His
                85                  90                  95
Ile Tyr Glu Lys Lys Ala His Asp Leu Gln Ser Glu Leu Asp Lys Gly
                100                 105                 110
Lys Glu Asp Thr Gln Lys Lys Ile His Lys Phe Glu Glu Ala Leu Lys
        115                 120                 125
Trp Lys Lys Trp Arg Gln Ile Xaa Leu Asp Pro Asn Leu Leu Arg Glu
    130                 135                 140
Lys Gln Ser Lys Glu Phe Leu Trp Gln Leu Glu Asp Ile Arg Gln Arg
145                 150                 155                 160
Tyr Glu Gln Gln Ile Val Glu Leu Lys Leu Glu His Glu Gln Glu Lys
                165                 170                 175
Thr His Leu Leu Gln Gln His Asn Ala Glu Lys Asp Ser Leu Val Arg
            180                 185                 190
Asp His Glu Arg Glu Ile Glu Asn Leu Glu Lys Gln Leu Arg Ala Ala
    195                 200                 205
Asn Met Glu His Glu Asn Gln Ile Gln Glu Phe Lys Lys Arg Asp Ala
    210                 215                 220
Gln Val Ile Ala Asp Met Glu Ala Gln Val His Lys Leu Arg Glu Glu
225                 230                 235                 240
Leu Ile Asn Val Asn Ser Gln Arg Lys Gln Gln Leu Val Glu Leu Gly
            245                 250                 255
Leu Leu Arg Glu Glu Glu Lys Gln Arg Ala Thr Arg Glu His Glu Ile
        260                 265                 270
Val Val Asn Lys Leu Lys Ala Glu Ser Glu Lys Met Lys Ile Glu Leu
        275                 280                 285
Lys Lys Thr His Ala Ala Glu Thr Glu Met Thr Leu Glu Lys Ala Asn
290                 295                 300
Ser Lys Leu Lys Gln Ile Glu Lys Glu Tyr Thr Gln Lys Leu Ala Lys
305                 310                 315                 320
Ser Ser Gln Ile Ile Ala Glu Leu Gln Thr Thr Ile Ser Ser Leu Lys
            325                 330                 335
Glu Glu Asn Ser Gln Gln Gln Leu Ala Ala Glu Arg Arg Leu Gln Asp
            340                 345                 350
Val Arg Gln Lys Phe Glu Asp Glu Lys Lys Gln Leu Ile Arg Asp Asn
    355                 360                 365
Asp Gln Ala Ile Lys Val Leu Gln Asp Glu Leu Glu Asn Arg Ser Asn
    370                 375                 380
Gln Val Arg Cys Ala Glu Lys Lys Leu Gln His Lys Glu Leu Glu Ser
385                 390                 395                 400
Gln Glu Gln Ile Thr Tyr Ile Arg Gln Glu Tyr Glu Thr Lys Leu Lys
                405                 410                 415
Gly Leu Met Pro Ala Ser Leu Arg Gln Glu Leu Glu Asp Thr Ile Ser
            420                 425                 430
Ser Leu Lys Ser Gln Val Asn Phe Leu Gln Lys Arg Ala Ser Ile Leu
            435                 440                 445
```

585

```
Gln Glu Glu Arg Asp Tyr Ile Ser Arg Gln Lys Val Gln Pro Ile Ser
    450                         455                 460
Arg Xaa Leu His Glu Arg Met Gln Arg Met Arg Ile Ser Arg Leu Cys
465                 470                 475                 480
Cys Gly Thr Ser Ser Ser Arg Phe Glu Asp Leu Asp Ile Val Asn Cys
                485                 490                 495
Glu Ile Ser Gly Ile Phe
            500     502
```

```
<210> 1067
<211> 301
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(301)
<223> X = any amino acid or stop code
```

```
<400> 1067
Val Ile Asn Leu Val Tyr Leu Ile Ser Ser Pro Arg Pro Glu Leu Lys
1               5               10                  15
Pro Val Asp Lys Glu Ser Glu Val Val Met Lys Phe Pro Asp Gly Phe
            20              25                  30
Glu Lys Phe Ser Pro Pro Ile Leu Gln Leu Asp Glu Val Asp Phe Tyr
        35                  40                  45
Tyr Asp Pro Lys His Val Ile Phe Ser Arg Leu Ser Val Ser Ala Asp
    50                  55                  60
Leu Glu Ser Arg Ile Cys Val Val Gly Glu Asn Gly Ala Gly Lys Ser
65                  70                  75                  80
Thr Met Leu Lys Leu Leu Leu Gly Asp Leu Ala Pro Val Arg Gly Ile
            85                  90                  95
Arg His Ala His Arg Asn Leu Lys Ile Gly Tyr Phe Ser Gln His His
            100             105                 110
Val Glu Gln Leu Asp Leu Asn Val Gln Cys Leu Trp Glu Leu Ala Gly
        115                 120                 125
His Ala Ser Phe Pro Gly Arg Pro Glu Glu Glu Tyr Arg His Gln Leu
        130             135                 140
Gly Phe Gly Met Gly Ile Ser Gly Glu Leu Ala Met Arg Pro Leu Cys
145             150                 155                 160
Gln Pro Val Leu Gly Ala Arg Lys Lys Pro Lys Trp Pro Phe Ala Gln
                165                 170                 175
Met Asp Tyr Cys Pro Ala Pro Thr Phe Tyr Ile Leu Asp Glu Pro Thr
            180                 185                 190
Asn His Leu Gly His Gly Arg Ala Ile Glu Ala Leu Gly Pro Cys Leu
        195                 200                 205
Gln Thr Ile Ser Gly Val Gly Val Ile Leu Val Ser His Glu Xaa Ser
    210                 215                 220
Ala Leu Ser Arg Leu Val Cys Arg Glu Leu Trp Val Cys Xaa Gly Gly
225                 230                 235                 240
Gly Val Thr Arg Val Glu Arg Lys Asp Phe Asp Gln Tyr Arg Ala Leu
                245                 250                 255
Leu Gln Gly Thr Val Ser Ala Arg Glu Gly Phe Pro Leu Gly Pro Pro
            260                 265                 270
Arg Leu Lys Asp Ser Pro Arg Asp Met Gly Leu Val Ser Gln Thr Pro
        275                 280                 285
Trp Gly His His Val Gly Tyr Pro Leu Pro Gly Arg Gly
    290                 295                 300 301
```

```
<210> 1068
<211> 215
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1068
Cys Ser Ala Val Glu Val Lys Met Ala Ala Arg Thr Ala Phe Gly Ala
 1               5                  10                  15
Val Cys Arg Arg Leu Trp Gln Gly Leu Gly Asn Phe Ser Val Asn Thr
            20                  25                  30
Ser Lys Gly Asn Thr Ala Lys Asn Gly Gly Leu Leu Leu Ser Thr Asn
       35                  40                  45
Met Lys Trp Val Gln Phe Ser Asn Leu His Val Asp Val Pro Lys Asp
       50                  55                  60
Leu Thr Lys Pro Val Val Thr Ile Ser Asp Glu Pro Asp Ile Leu Tyr
65                  70                  75                  80
Lys Arg Leu Ser Val Leu Val Lys Gly His Asp Lys Ala Val Leu Asp
                85                  90                  95
Ser Tyr Glu Tyr Phe Ala Val Leu Ala Ala Lys Glu Leu Gly Ile Ser
               100                 105                 110
Ile Lys Val His Glu Pro Pro Arg Lys Ile Glu Arg Phe Thr Leu Leu
           115                 120                 125
Gln Ser Val His Ile Tyr Lys Lys His Arg Val Gln Tyr Glu Met Arg
       130                 135                 140
Thr Leu Tyr Arg Cys Leu Glu Leu Glu His Leu Thr Gly Ser Thr Ala
145                 150                 155                 160
Asp Val Tyr Leu Glu Tyr Ile Gln Arg Asn Leu Pro Glu Gly Val Ala
               165                 170                 175
Met Glu Val Thr Lys Phe Cys Phe Phe Ile Phe Leu Thr Gln Leu Glu
           180                 185                 190
Gln Leu Pro Glu His Ile Lys Glu Pro Ile Trp Glu Thr Leu Ser Glu
       195                 200                 205
Glu Lys Glu Glu Ser Lys Ser
210                 215
```

```
<210> 1069
<211> 274
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(274)
<223> X = any amino acid or stop code
```

```
<400> 1069
Asp Phe Trp Asp Thr Ala Gly Gln Glu Arg Phe Gln Ser Met His Ala
 1               5                  10                  15
Ser Tyr Tyr His Lys Thr His Ala Cys Ile Met Val Phe Asp Val Gln
            20                  25                  30
Arg Lys Val Thr His Arg Asn Leu Ser Thr Trp Tyr Thr Glu Leu Arg
       35                  40                  45
Glu Phe Arg Pro Glu Ile Pro Cys Ile Val Val Ala Asn Lys Ile Asp
       50                  55                  60
```

```
Gly Gly Ala Ile Pro Ala Pro Gly Cys Xaa Gln Phe Thr Gly Asp Leu
65                  70                  75                  80
Pro Ser Tyr Ile Ser Ser Ser Ile Pro Arg Ala Gly Asn Leu Gln Xaa
                85                  90                  95
Leu Val Leu Pro Pro Thr Ile Arg Tyr Asn Pro Trp Leu Val Ala Cys
            100                 105                 110
Ile Leu Pro Thr Leu Xaa Arg Ser Gln Leu Ser Arg Pro Ala Leu Phe
        115                 120                 125
Pro Arg His Arg Ser Leu Leu Thr Glu Leu Phe Leu Gly Pro Val Ser
    130                 135                 140
Gln Ser Ser Leu Pro Ile Pro Leu Ser Gly Met Lys Ala Ser Ser Gly
145                 150                 155                 160
Pro Pro Leu Gln Thr Phe Phe Pro Ser Leu Asp Arg Gln Thr Asn Val
            165                 170                 175
Leu Pro Ser Leu Tyr Ala Asp Ile Asn Val Thr Gln Lys Ser Phe Asn
        180                 185                 190
Phe Ala Lys Lys Phe Ser Leu Pro Leu Tyr Phe Val Ser Ala Ala Asp
    195                 200                 205
Gly Thr Asn Val Val Lys Leu Phe Asn Asp Ala Ile Arg Leu Ala Val
    210                 215                 220
Ser Tyr Lys Gln Asn Ser Gln Asp Phe Met Asp Glu Ile Phe Gln Glu
225                 230                 235                 240
Leu Glu Asn Phe Ser Leu Glu Gln Glu Glu Glu Asp Val Pro Asp Gln
            245                 250                 255
Glu Gln Ser Ser Ser Ile Glu Thr Pro Ser Glu Glu Val Ala Ser Pro
            260                 265                 270
His Ser
274
```

```
<210> 1070
<211> 368
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(368)
<223> X = any amino acid or stop code
```

```
<400> 1070
Gly Ala Thr Pro Leu Gly Ser Val Gly Gly Arg Thr Gly Lys Met Asp
1               5                   10                  15
Ala Ala Thr Leu Thr Tyr Asp Thr Leu Arg Phe Ala Glu Phe Glu Asp
            20                  25                  30
Phe Pro Glu Thr Ser Glu Pro Val Trp Ile Leu Gly Arg Lys Tyr Ser
        35                  40                  45
Ile Phe Thr Glu Lys Asp Glu Ile Leu Ser Asp Val Ala Ser Arg Leu
    50                  55                  60
Trp Phe Thr Tyr Arg Lys Asn Phe Pro Ala Ile Gly Gly Thr Gly Pro
65                  70                  75                  80
Thr Ser Asp Thr Gly Trp Gly Cys Met Leu Arg Cys Gly Gln Met Ile
            85                  90                  95
Phe Ala Gln Ala Leu Val Cys Arg His Leu Gly Arg Asp Trp Arg Trp
        100                 105                 110
Thr Gln Arg Lys Arg Gln Pro Asp Ser Tyr Phe Ser Val Leu Asn Ala
    115                 120                 125
Phe Ile Asp Arg Lys Asp Ser Tyr Tyr Ser Ile His Gln Ile Ala Gln
    130                 135                 140
Met Gly Val Gly Glu Gly Lys Ser Ile Gly Gln Trp Tyr Gly Pro Asn
```

```
145                    150                   155                    160
Thr Val Ala Gln Val Leu Lys Lys Leu Ala Val Phe Asp Thr Trp Ser
                165                   170                   175
Ser Leu Ala Val His Ile Ala Met Asp Asn Thr Val Val Met Glu Glu
                180                   185                   190
Ile Arg Arg Leu Cys Arg Thr Ser Val Pro Cys Ala Gly Ala Thr Ala
        195                   200                   205
Phe Pro Ala Asp Ser Asp Arg His Cys Asn Gly Phe Pro Ala Gly Ala
    210                   215                   220
Glu Val Thr Asn Arg Pro Ser Pro Trp Arg Pro Leu Val Leu Leu Ile
225                   230                   235                   240
Pro Leu Arg Leu Gly Leu Thr Asp Ile Asn Glu Ala Tyr Val Glu Thr
                245                   250                   255
Leu Lys His Cys Phe Met Met Pro Gln Ser Leu Gly Val Ile Gly Gly
                260                   265                   270
Lys Pro Asn Ser Ala His Tyr Phe Ile Gly Xaa Val Gly Glu Glu Leu
            275                   280                   285
Ile Tyr Leu Asp Pro His Thr Thr Gln Pro Ala Val Glu Pro Thr Asp
            290                   295                   300
Gly Cys Phe Ile Pro Asp Glu Ser Phe His Cys Gln His Pro Pro Cys
305                   310                   315                   320
Arg Met Ser Ile Ala Glu Leu Asp Pro Ser Ile Ala Val Val Arg Gly
                325                   330                   335
Gly His Leu Ser Thr Gln Ala Phe Gly Ala Glu Cys Cys Leu Gly Met
            340                   345                   350
Thr Arg Lys Thr Phe Gly Phe Leu Arg Phe Phe Phe Ser Met Leu Gly
            355                   360                   365       368
```

<210> 1071
<211> 81
<212>Amino acid
<213> Homo sapiens

<400> 1071
```
Ala Leu Cys Val Val Pro Phe Asn Thr Phe His Asn Asp Phe Leu Leu
1               5                   10                  15
Leu Asp Lys Glu Gly Thr Leu Asp Pro Val Met Asp Ser Phe Ser Thr
            20                  25                  30
His Trp Thr Thr Ile Gly Pro Ala Asp Met Phe Phe Ser Phe Arg Gln
        35                  40                  45
His Tyr Lys Asn Phe Lys Ser His Gly Thr Asn Pro Ser Lys Ser Val
    50                  55                  60
Trp Ala His Ala Thr Cys Gln Ser Cys Ala Phe Pro Asn Leu Leu Gly
65                  70                  75                  80
Trp
81
```

<210> 1072
<211> 494
<212>Amino acid
<213> Homo sapiens

```
<400> 1072
Thr Arg Leu Ala Glu Phe Gly Thr Arg Asp Pro Cys Ala Gln Ala Pro
 1               5                  10                  15
Cys Glu Gln Gln Cys Glu Pro Gly Gly Pro Gln Gly Tyr Ser Cys His
            20                  25                  30
Cys Arg Leu Gly Phe Arg Pro Ala Glu Asp Asp Pro His Arg Cys Val
        35                  40                  45
Asp Thr Asp Glu Cys Gln Ile Ala Gly Val Cys Gln Gln Met Cys Val
    50                  55                  60
Asn Tyr Val Gly Gly Phe Glu Cys Tyr Cys Ser Glu Gly His Glu Leu
65                  70                  75                  80
Glu Ala Asp Gly Ile Ser Cys Ser Pro Ala Gly Ala Met Gly Ala Gln
                85                  90                  95
Ala Ser Gln Asp Leu Gly Asp Glu Leu Leu Asp Asp Gly Glu Asp Glu
            100                 105                 110
Glu Asp Glu Asp Glu Ala Trp Lys Ala Phe Asn Gly Gly Trp Thr Glu
        115                 120                 125
Met Pro Gly Ile Leu Trp Met Glu Pro Thr Gln Pro Pro Asp Phe Ala
    130                 135                 140
Leu Ala Tyr Arg Pro Ser Phe Pro Glu Asp Arg Glu Pro Gln Ile Pro
145                 150                 155                 160
Tyr Pro Glu Pro Thr Trp Pro Pro Leu Ser Ala Pro Arg Val Pro
                165                 170                 175
Tyr His Ser Ser Val Leu Ser Val Thr Arg Pro Val Val Val Ser Ala
            180                 185                 190
Thr His Pro Thr Leu Pro Ser Ala His Gln Pro Pro Val Ile Pro Ala
        195                 200                 205
Thr His Pro Ala Leu Ser Arg Asp His Gln Ile Pro Val Ile Ala Ala
    210                 215                 220
Asn Tyr Pro Asp Leu Pro Ser Ala Tyr Gln Pro Gly Ile Leu Ser Val
225                 230                 235                 240
Ser His Ser Ala Gln Pro Pro Ala His Gln Pro Pro Met Ile Ser Thr
                245                 250                 255
Lys Tyr Pro Glu Leu Phe Pro Ala His Gln Ser Pro Met Phe Pro Asp
            260                 265                 270
Thr Arg Val Ala Gly Thr Gln Thr Thr His Leu Pro Gly Ile Pro
        275                 280                 285
Pro Asn His Ala Pro Leu Val Thr Thr Leu Gly Ala Gln Leu Pro Pro
    290                 295                 300
Gln Ala Pro Asp Ala Leu Val Leu Arg Thr Gln Ala Thr Gln Leu Pro
305                 310                 315                 320
Ile Ile Pro Thr Ala Gln Pro Ser Leu Thr Thr Thr Ser Arg Ser Pro
                325                 330                 335
Val Ser Pro Ala His Gln Ile Ser Val Pro Ala Ala Thr Gln Pro Ala
            340                 345                 350
Ala Leu Pro Thr Leu Leu Pro Ser Gln Ser Pro Thr Asn Gln Thr Ser
        355                 360                 365
Pro Ile Ser Pro Thr His Pro His Ser Lys Ala Pro Gln Ile Pro Arg
    370                 375                 380
Glu Asp Gly Pro Ser Pro Lys Leu Ala Leu Trp Leu Pro Ser Pro Ala
385                 390                 395                 400
Pro Thr Ala Ala Pro Thr Ala Leu Gly Glu Ala Gly Leu Ala Glu His
                405                 410                 415
Ser Gln Arg Asp Asp Arg Trp Leu Leu Val Ala Leu Leu Val Pro Thr
            420                 425                 430
Cys Val Phe Leu Val Val Leu Leu Ala Leu Gly Ile Val Tyr Cys Thr
        435                 440                 445
Arg Cys Gly Pro His Ala Pro Asn Lys Arg Ile Thr Asp Cys Tyr Arg
    450                 455                 460
Trp Val Ile His Ala Gly Ser Lys Ser Pro Thr Glu Pro Met Pro Pro
465                 470                 475                 480
Arg Gly Ser Leu Thr Gly Val Gln Thr Cys Arg Thr Ser Val
                485                 490                 494
```

590

```
<210> 1073
<211> 468
<212>Amino acid
<213> Homo sapiens
```


```
     <400> 1073
Leu Arg Val Arg Arg Arg Pro His Leu Pro Ala Pro Pro Ala Leu Arg
 1               5                  10                  15
Ala Arg Arg Ser Asp Arg Arg Ser Ser Arg Ala Pro Ala Ala Phe Pro
                20                  25                  30
Pro Arg Pro Pro His Ala Ser Pro Ala Pro Gly Pro Ala Met Ala Gln
         35                  40                  45
Ala Val Trp Ser Arg Leu Gly Arg Ile Leu Trp Leu Ala Cys Leu Leu
     50                  55                  60
Pro Trp Ala Pro Ala Gly Val Ala Ala Gly Leu Tyr Glu Leu Asn Leu
65                  70                  75                  80
Thr Thr Asp Ser Pro Ala Thr Thr Gly Ala Val Val Thr Ile Ser Ala
                85                  90                  95
Ser Leu Val Ala Lys Asp Asn Gly Ser Leu Ala Leu Pro Ala Asp Ala
            100                 105                 110
His Leu Tyr Arg Phe His Trp Ile His Thr Pro Leu Val Leu Thr Gly
        115                 120                 125
Lys Met Glu Lys Gly Leu Ser Ser Thr Ile Arg Val Val Gly His Val
    130                 135                 140
Pro Gly Glu Phe Pro Val Ser Val Trp Val Thr Ala Ala Asp Cys Trp
145                 150                 155                 160
Met Cys Gln Pro Val Ala Arg Gly Phe Val Val Leu Pro Ile Thr Glu
                165                 170                 175
Phe Leu Val Gly Asp Leu Val Val Thr Gln Asn Thr Ser Leu Pro Trp
            180                 185                 190
Pro Ser Ser Tyr Leu Thr Lys Thr Val Leu Lys Val Ser Phe Leu Leu
        195                 200                 205
His Asp Pro Ser Asn Phe Leu Lys Thr Ala Leu Phe Leu Tyr Ser Trp
    210                 215                 220
Asp Phe Gly Asp Gly Thr Gln Met Val Thr Glu Asp Ser Val Val Tyr
225                 230                 235                 240
Tyr Asn Tyr Ser Ile Ile Gly Thr Phe Thr Val Lys Leu Lys Val Val
                245                 250                 255
Ala Glu Trp Glu Glu Val Glu Pro Asp Ala Thr Arg Ala Val Lys Gln
                260                 265                 270
Lys Thr Gly Asp Phe Ser Ala Ser Leu Lys Leu Gln Glu Thr Leu Arg
        275                 280                 285
Gly Ile Gln Val Leu Gly Pro Thr Leu Ile Gln Thr Phe Gln Lys Met
    290                 295                 300
Thr Val Thr Leu Asn Phe Leu Gly Ser Pro Pro Leu Thr Val Cys Trp
305                 310                 315                 320
Arg Leu Lys Pro Glu Cys Leu Pro Leu Glu Glu Gly Glu Cys His Pro
                325                 330                 335
Val Ser Val Ala Ser Thr Ala Tyr Asn Leu Thr His Thr Phe Arg Asp
            340                 345                 350
Pro Gly Asp Tyr Cys Phe Ser Ile Arg Ala Glu Asn Ile Ile Ser Lys
        355                 360                 365
Thr His Gln Tyr His Lys Ile Gln Val Trp Pro Ser Arg Ile Gln Pro
    370                 375                 380
Ala Val Phe Ala Phe Pro Cys Ala Thr Leu Ile Thr Val Met Leu Ala
385                 390                 395                 400
Phe Ile Met Tyr Met Thr Leu Arg Asn Ala Thr Gln Gln Lys Asp Met
                405                 410                 415
Val Glu Asn Pro Glu Pro Pro Ser Gly Val Arg Cys Cys Cys Gln Met
```

```
                    420                      425                        430
Cys Cys Gly Pro Phe Leu Leu Glu Thr Pro Ser Glu Tyr Leu Glu Ile
            435                      440                        445
Val Arg Glu Asn His Gly Leu Leu Pro Pro Leu Tyr Lys Ser Val Lys
    450                      455                        460
Thr Tyr Thr Val
465             468
```

```
    <210> 1074
    <211> 288
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1074
Val Val Glu Phe Ala Phe Gln Leu Ser Ser Val Ser Val Cys Leu Thr
1               5                   10                      15
Val Ser Phe Gly Trp Gln Leu Gly Thr Val Ser Ser Cys Leu Ser Arg
            20                      25                      30
Asp Trp Phe Leu Lys Gly Asn Leu Leu Ile Ile Ile Val Ser Val Leu
            35                      40                      45
Ile Ile Leu Pro Leu Ala Leu Met Lys His Leu Gly Tyr Leu Gly Tyr
    50                      55                      60
Thr Ser Gly Leu Ser Leu Thr Cys Met Leu Phe Phe Leu Val Ser Val
65                      70                      75                      80
Ile Tyr Lys Lys Phe Gln Leu Gly Cys Ala Ile Gly His Asn Glu Thr
                85                      90                      95
Ala Met Glu Ser Glu Ala Leu Val Gly Leu Pro Ser Gln Gly Leu Asn
            100                     105                     110
Ser Ser Cys Glu Ala Gln Met Phe Thr Val Asp Ser Gln Met Ser Tyr
            115                     120                     125
Thr Val Pro Ile Met Ala Phe Ala Phe Val Cys His Pro Glu Val Leu
    130                     135                     140
Pro Ile Tyr Thr Glu Leu Cys Arg Pro Ser Lys Arg Arg Met Gln Ala
145                     150                     155                     160
Val Ala Asn Val Ser Ile Gly Ala Met Phe Cys Met Tyr Gly Leu Thr
                165                     170                     175
Ala Thr Phe Gly Tyr Leu Thr Phe Tyr Ser Ser Val Lys Ala Glu Met
            180                     185                     190
Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu Cys Val Arg Leu
            195                     200                     205
Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro Val Val Leu Phe Pro
    210                     215                     220
Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly Lys Ala Phe Ser
225                     230                     235                     240
Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu Val Leu Val Asn
                245                     250                     255
Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp Ile Phe Gly Val Ile
            260                     265                     270
Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile Leu Pro Ser Cys Ile
            275                     280                     285                     288
```

```
    <210> 1075
    <211> 273
    <212>Amino acid
    <213> Homo sapiens
```

```
        <220>
        <221> misc_feature
        <222> (1)...(273)
        <223> X = any amino acid or stop code




        <400> 1075
Gly Ala Gly Ser Lys Ser Ser Met Met Gln Leu Met His Leu Glu Ser
 1           5                   10                  15
Phe Tyr Glu Lys Pro Pro Pro Gly Leu Ile Lys Glu Asp Asp Thr Lys
            20                  25                  30
Pro Glu Asp Cys Ile Pro Asp Val Pro Gly Asn Glu His Ala Arg Glu
            35                  40                  45
Phe Leu Ala His Thr Pro Thr Lys Gly Leu Trp Met Pro Leu Glu Lys
        50                  55                  60
Glu Val Lys Val Lys His Cys Thr Phe His Trp Ile Ala Ser Xaa Phe
 65                  70                  75                  80
Leu Gly Asp Gly Lys Phe Ile Pro Lys Ala Thr Arg Leu Lys Asp Val
                85                  90                  95
Trp Val Ser Asn Xaa Phe Thr Cys Leu Phe Trp Asp Leu Thr Arg Phe
            100                 105                 110
Ile His Asp Cys Ile Phe Phe Xaa Asn Trp Ser Leu Met Asn Lys Asn
        115                 120                 125
Phe Asn Ile Ile Tyr Xaa Phe Phe Ile Ser Leu Arg Xaa Asn Thr Leu
        130                 135                 140
Ile Leu Gln Lys Tyr Phe Pro Phe Ser Leu Leu Leu Gly Trp His Cys
145                 150                 155                 160
Lys Trp Tyr Gly His Arg Thr Gly Tyr Lys Glu Cys Pro Phe Phe Ile
                165                 170                 175
Lys Asp Asn Gln Lys Leu Gln Gln Phe Arg Val Ala His Glu Asp Phe
            180                 185                 190
Met Tyr Asp Ile Ile Arg Asp Asn Lys Gln His Glu Lys Asn Val Arg
            195                 200                 205
Ile Gln Gln Leu Lys Gln Leu Leu Glu Asp Ser Thr Ser Gly Glu Asp
        210                 215                 220
Arg Ser Ser Ser Ser Ser Ser Glu Gly Lys Glu Lys His Lys Lys Lys
225                 230                 235                 240
Lys Lys Lys Glu Lys His Lys Lys Arg Lys Lys Glu Lys Lys Lys Lys
                245                 250                 255
Lys Lys Arg Lys His Lys Ser Ser Lys Ser Asn Glu Gly Ser Asp Ser
            260                 265                 270
Glu
273



        <210> 1076
        <211> 815
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(815)
        <223> X = any amino acid or stop code



        <400> 1076
Glu Ile Ala Gly Ala Ala Ala Glu Asn Met Leu Gly Ser Leu Leu Cys
```

```
  1                    5                        10                       15
Leu Pro Gly Ser Gly Ser Val Leu Leu Asp Pro Cys Thr Gly Ser Thr
             20                       25                       30
Ile Ser Glu Thr Thr Ser Glu Ala Trp Ser Val Glu Val Leu Pro Ser
             35                       40                       45
Asp Ser Glu Ala Pro Asp Leu Lys Gln Glu Glu Arg Leu Gln Glu Leu
     50                       55                       60
Glu Ser Cys Ser Gly Leu Gly Ser Thr Ser Asp Asp Thr Asp Val Arg
     65                       70                       75                  80
Glu Val Ser Ser Arg Pro Ser Thr Pro Gly Leu Ser Val Val Ser Gly
                 85                       90                       95
Ile Ser Ala Thr Ser Glu Asp Ile Pro Asn Lys Ile Glu Asp Leu Arg
             100                      105                      110
Ser Glu Cys Ser Ser Asp Phe Gly Gly Lys Asp Ser Val Thr Ser Pro
         115                      120                      125
Asp Met Asp Glu Ile Thr His Asp Phe Leu Tyr Ile Leu Gln Pro Lys
     130                      135                      140
Gln His Phe Gln His Ile Glu Ala Glu Ala Asp Met Arg Ile Gln Leu
145                      150                      155                      160
Ser Ser Ser Ala His Gln Leu Thr Ser Pro Pro Ser Gln Ser Glu Ser
                 165                      170                      175
Leu Leu Ala Met Phe Asp Pro Leu Ser Ser His Glu Gly Ala Ser Ala
             180                      185                      190
Val Val Arg Pro Lys Val His Tyr Ala Arg Pro Ser His Pro Pro Pro
         195                      200                      205
Asp Pro Pro Ile Leu Glu Gly Ala Val Gly Gly Asn Glu Ala Arg Leu
     210                      215                      220
Pro Asn Phe Gly Ser Pro Met Phe Xaa Leu Pro Ala Glu Met Glu Ala
225                      230                      235                      240
Phe Lys Gln Arg His Ser Tyr Thr Pro Glu Arg Leu Val Arg Ser Arg
             245                      250                      255
Ser Ser Asp Ile Val Ser Ser Val Arg Arg Pro Met Ser Asp Pro Ser
             260                      265                      270
Trp Asn Arg Arg Pro Gly Asn Glu Glu Arg Glu Leu Pro Pro Ala Ala
         275                      280                      285
Ala Ile Gly Ala Thr Ser Leu Val Ala Ala Pro His Ser Ser Ser Ser
     290                      295                      300
Ser Pro Ser Lys Asp Ser Ser Arg Gly Glu Thr Glu Glu Arg Lys Asp
305                      310                      315                      320
Ser Asp Asp Glu Lys Ser Asp Arg Asn Arg Pro Trp Trp Arg Lys Arg
             325                      330                      335
Phe Val Ser Ala Met Pro Lys Ala Pro Ile Pro Phe Arg Lys Lys Glu
             340                      345                      350
Lys Gln Glu Lys Asp Lys Asp Asp Leu Gly Pro Asp Arg Phe Ser Thr
         355                      360                      365
Leu Thr Asp Asp Pro Ser Pro Arg Leu Ser Ala Gln Ala Gln Val Ala
     370                      375                      380
Glu Asp Ile Leu Asp Lys Tyr Arg Asn Ala Ile Lys Arg Thr Ser Pro
385                      390                      395                      400
Ser Asp Gly Ala Met Ala Asn Tyr Glu Ser Thr Glu Val Met Gly Asp
             405                      410                      415
Gly Glu Ser Ala His Asp Ser Pro Arg Asp Glu Ala Leu Gln Asn Ile
             420                      425                      430
Ser Ala Asp Asp Leu Pro Asp Ser Ala Ser Gln Ala Ala His Pro Gln
         435                      440                      445
Asp Ser Ala Phe Ser Tyr Arg Asp Ala Lys Lys Lys Leu Arg Leu Ala
     450                      455                      460
Leu Cys Ser Ala Asp Ser Val Ala Phe Pro Val Leu Thr His Ser Thr
465                      470                      475                      480
Arg Asn Gly Leu Pro Asp His Thr Asp Pro Glu Asp Asn Glu Ile Val
             485                      490                      495
Cys Phe Leu Lys Val Gln Ile Ala Glu Ala Ile Asn Leu Gln Asp Lys
             500                      505                      510
Asn Leu Met Ala Gln Leu Gln Glu Thr Met Arg Cys Val Cys Arg Phe
```

594

```
              515                    520                    525
Asp Asn Arg Thr Cys Arg Lys Leu Leu Ala Ser Ile Ala Glu Asp Tyr
        530                535                540
Arg Lys Arg Ala Pro Tyr Ile Ala Tyr Leu Thr Arg Cys Arg Gln Gly
545                550                 555                    560
Leu Gln Thr Thr Gln Ala His Leu Glu Arg Leu Leu Gln Arg Val Leu
                565                570                    575
Arg Asp Lys Glu Val Ala Asn Arg Tyr Phe Thr Thr Val Cys Val Arg
                580                585                590
Leu Leu Leu Glu Ser Lys Glu Lys Lys Ile Arg Glu Phe Ile Gln Asp
            595                600                605
Phe Gln Lys Leu Thr Ala Ala Asp Asp Lys Thr Ala Gln Val Glu Asp
    610                615                620
Phe Leu Gln Phe Leu Tyr Gly Ala Met Ala Gln Asp Val Ile Trp Gln
625                630                635                    640
Asn Ala Ser Glu Glu Gln Leu Gln Asp Ala Gln Leu Ala Ile Glu Arg
                645                650                    655
Ser Val Met Asn Arg Ile Phe Lys Leu Ala Phe Tyr Pro Asn Gln Asp
                660                665                670
Gly Asp Ile Leu Arg Asp Gln Val Leu His Glu His Ile Gln Arg Leu
            675                680                685
Ser Lys Val Val Thr Ala Asn His Arg Ala Leu Gln Ile Pro Glu Val
        690                695                700
Tyr Leu Arg Glu Ala Pro Trp Pro Ser Ala Gln Ser Glu Ile Arg Thr
705                710                715                    720
Ile Ser Ala Tyr Lys Thr Pro Arg Asp Lys Val Gln Cys Ile Leu Arg
                725                730                735
Met Cys Ser Thr Ile Met Asn Leu Leu Ser Leu Ala Asn Glu Asp Ser
                740                745                750
Val Pro Gly Ala Asp Asp Phe Val Pro Val Leu Val Phe Val Leu Ile
            755                760                765
Lys Ala Asn Pro Pro Cys Leu Leu Ser Thr Val Gln Tyr Ile Ser Ser
770                775                780
Phe Tyr Ala Ser Cys Leu Ser Gly Glu Glu Ser Tyr Trp Trp Met Gln
785                790                795                    800
Phe Thr Ala Ala Val Glu Phe Ile Lys Thr Ile Asp Asp Arg Lys
                805                810                815
```

```
        <210> 1077
        <211> 256
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1077
Trp Pro Met Ser Leu Ala Arg Gly His Gly Asp Thr Ala Ala Ser Thr
1                5                10                15
Ala Ala Pro Leu Ser Glu Glu Gly Glu Val Thr Ser Gly Leu Gln Ala
            20                25                30
Leu Ala Val Glu Asp Thr Gly Gly Pro Ser Ala Ser Ala Gly Lys Ala
        35                40                45
Glu Asp Glu Gly Glu Gly Gly Arg Glu Glu Thr Glu Arg Glu Gly Ser
        50                55                60
Gly Gly Glu Glu Ala Gln Gly Glu Val Pro Ser Ala Gly Gly Glu Glu
65                70                75                80
Pro Ala Glu Glu Asp Ser Glu Asp Trp Cys Val Pro Cys Ser Asp Glu
                85                90                95
Glu Val Glu Leu Pro Ala Asp Gly Gln Pro Trp Met Pro Pro Pro Ser
            100                105                110
Glu Ile Gln Arg Leu Tyr Glu Leu Leu Ala Ala His Gly Thr Leu Glu
```

595

```
              115                    120                    125
Leu Gln Ala Glu Ile Leu Pro Arg Arg Pro Pro Thr Pro Glu Ala Gln
    130                    135                    140
Ser Glu Glu Glu Arg Ser Asp Glu Glu Pro Glu Ala Lys Glu Glu Glu
145                    150                    155                    160
Glu Glu Lys Pro His Met Pro Thr Glu Phe Asp Phe Asp Asp Glu Pro
              165                    170                    175
Val Thr Pro Lys Asp Ser Leu Ile Asp Arg Arg Arg Thr Pro Gly Ser
          180                    185                    190
Ser Ala Arg Ser Gln Lys Arg Glu Ala Arg Leu Asp Lys Val Leu Ser
      195                    200                    205
Asp Met Lys Arg His Lys Lys Leu Glu Glu Gln Ile Leu Arg Thr Gly
210                    215                    220
Arg Asp Leu Phe Ser Leu Asp Ser Glu Asp Pro Ser Pro Ala Ser Pro
225                    230                    235                    240
Pro Leu Arg Ser Ser Gly Ser Ser Leu Phe Pro Arg Gln Arg Lys Tyr
              245                    250                    255 256
```

```
<210> 1078
<211> 590
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(590)
<223> X = any amino acid or stop code
```

```
          <400> 1078
Leu Gly Arg Gly Thr Phe Gly Gln Val Val Xaa Cys Trp Lys Arg Gly
1                 5                    10                    15
Thr Asn Glu Ile Val Ala Ile Lys Ile Leu Lys Asn His Pro Ser Tyr
          20                    25                    30
Ala Arg Gln Gly Gln Ile Glu Val Ser Ile Leu Ala Arg Leu Ser Thr
      35                    40                    45
Glu Ser Ala Asp Asp Tyr Asn Phe Val Arg Ala Tyr Glu Cys Phe Gln
    50                    55                    60
His Lys Asn His Thr Cys Leu Val Phe Glu Met Leu Glu Gln Asn Leu
65                    70                    75                    80
Tyr Asp Phe Leu Lys Gln Asn Lys Phe Ser Pro Leu Pro Leu Lys Tyr
              85                    90                    95
Ile Arg Pro Val Leu Gln Gln Val Ala Thr Ala Leu Met Lys Leu Lys
          100                    105                    110
Ser Leu Gly Leu Ile His Ala Asp Leu Lys Pro Glu Asn Ile Met Leu
      115                    120                    125
Val Asp Pro Ser Arg Gln Pro Tyr Arg Val Lys Val Ile Asp Phe Gly
    130                    135                    140
Ser Ala Ser His Val Ser Lys Ala Val Cys Ser Thr Tyr Leu Gln Ser
145                    150                    155                    160
Arg Tyr Tyr Arg Ala Pro Glu Ile Ile Leu Gly Leu Pro Phe Cys Glu
              165                    170                    175
Ala Ile Asp Met Trp Ser Leu Gly Cys Val Ile Ala Glu Leu Phe Leu
          180                    185                    190
Gly Trp Pro Leu Tyr Pro Gly Ala Ser Glu Tyr Asp Gln Ile Arg Tyr
      195                    200                    205
Ile Ser Gln Thr Gln Gly Leu Pro Ala Glu Tyr Leu Leu Ser Ala Gly
210                    215                    220
```

596

```
Thr Lys Thr Thr Arg Phe Phe Asn Arg Asp Thr Asp Ser Pro Tyr Pro
225             230             235             240
Leu Trp Arg Leu Lys Thr Pro Asp Asp His Glu Ala Glu Thr Gly Ile
            245             250             255
Lys Ser Lys Glu Ala Arg Lys Tyr Ile Phe Asn Cys Leu Asp Asp Met
        260             265             270
Ala Gln Val Asn Met Thr Thr Asp Leu Glu Gly Ser Asp Met Leu Val
    275             280             285
Glu Lys Ala Val Arg Arg Glu Phe Ile Asp Leu Leu Lys Lys Met Leu
    290             295             300
Ser Ile Asp Ser Val Lys Arg Phe Ser Pro Val Gly Ser Leu Asn His
305             310             315             320
Pro Phe Val Thr Met Ser Leu Phe Leu Asp Phe Pro His Ser Thr His
            325             330             335
Val Lys Ser Cys Phe Gln Asn Met Glu Ile Cys Lys Arg Arg Val Asn
            340             345             350
Met Tyr Asp Thr Val Asn Gln Ser Lys Thr Pro Phe Ile Thr His Val
        355             360             365
Ala Pro Ser Thr Ser Thr Asn Leu Thr Met Thr Phe Asn Asn Gln Leu
    370             375             380
Thr Thr Val His Asn Gln Pro Ser Ala Ala Ser Met Ala Ala Val Ala
385             390             395             400
Gln Arg Ser Met Pro Leu Gln Thr Gly Thr Ala Gln Ile Cys Ala Arg
            405             410             415
Pro Asp Pro Phe Gln Gln Ala Leu Ile Val Cys Pro Pro Gly Phe Gln
            420             425             430
Gly Leu Gln Ala Ser Pro Ser Lys His Ala Gly Tyr Ser Val Arg Met
        435             440             445
Glu Asn Ala Val Pro Ile Val Thr Gln Ala Pro Gly Ala Gln Pro Leu
    450             455             460
Gln Ile Gln Pro Gly Leu Leu Ala Gln Gln Ala Trp Pro Ser Gly Thr
465             470             475             480
Gln Gln Ile Leu Leu Pro Pro Ala Trp Gln Gln Leu Thr Gly Val Ala
            485             490             495
Thr His Thr Ser Val Gln His Ala Ala Val Ile Pro Glu Thr Met Ala
            500             505             510
Gly Thr Gln Gln Leu Ala Asp Trp Arg Asn Thr His Ala His Gly Ser
        515             520             525
His Tyr Asn Pro Ile Met Gln Gln Pro Ala Leu Leu Thr Gly His Val
    530             535             540
Thr Leu Pro Ala Ala Gln Pro Leu Asn Val Gly Val Ala His Val Met
545             550             555             560
Arg Gln Gln Pro Thr Ser Thr Thr Ser Ser Arg Lys Ser Lys Gln His
            565             570             575
Leu Tyr Cys Gly Arg Ala Arg Val Ser Lys Ile Ala Ser Arg
        580             585             590
```

```
<210> 1079
<211> 904
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(904)
<223> X = any amino acid or stop code
```

```
<400> 1079
Glu Phe Ala Ile Cys Arg Tyr Pro Leu Gly Met Ser Gly Gly Gln Ile
```

```
 1                   5                   10                  15
Pro Asp Glu Asp Ile Thr Ala Ser Ser Gln Trp Ser Glu Ser Thr Ala
              20                  25                  30
Ala Lys Tyr Gly Arg Leu Asp Ser Glu Glu Gly Asp Gly Ala Trp Cys
          35                  40                  45
Pro Glu Ile Pro Val Glu Pro Asp Asp Leu Lys Glu Phe Leu Gln Ile
      50                  55                  60
Asp Leu His Thr Leu His Phe Ile Thr Leu Val Gly Thr Gln Gly Arg
  65                  70                  75                  80
His Ala Gly Gly His Gly Ile Glu Phe Ala Pro Met Tyr Lys Ile Asn
              85                  90                  95
Tyr Ser Arg Asp Gly Thr Arg Trp Ile Ser Trp Arg Asn Arg His Gly
          100                 105                 110
Lys Gln Val Leu Asp Gly Asn Ser Asn Pro Tyr Asp Ile Phe Leu Lys
          115                 120                 125
Asp Leu Glu Pro Pro Ile Val Ala Arg Phe Val Arg Phe Ile Pro Val
      130                 135                 140
Thr Asp His Ser Met Asn Val Cys Met Arg Val Glu Leu Tyr Gly Cys
      145                 150                 155                 160
Val Trp Leu Asp Gly Leu Val Ser Tyr Asn Ala Pro Ala Gly Gln Gln
              165                 170                 175
Phe Val Leu Pro Gly Gly Ser Ile Ile Tyr Leu Asn Asp Ser Val Tyr
          180                 185                 190
Asp Gly Ala Val Gly Tyr Ser Met Thr Glu Gly Leu Gly Gln Leu Thr
      195                 200                 205
Asp Gly Val Ser Gly Leu Asp Asp Phe Thr Gln Thr His Glu Tyr His
      210                 215                 220
Val Trp Pro Gly Tyr Asp Tyr Val Gly Trp Arg Asn Glu Ser Ala Thr
225                 230                 235                 240
Asn Gly Tyr Ile Glu Ile Met Phe Glu Phe Asp Arg Ile Arg Asn Phe
              245                 250                 255
Thr Thr Met Lys Val His Cys Asn Asn Met Phe Ala Lys Gly Val Lys
          260                 265                 270
Ile Phe Lys Glu Val Gln Cys Tyr Phe Arg Ser Glu Ala Ser Glu Trp
      275                 280                 285
Glu Pro Asn Ala Ile Ser Phe Pro Leu Val Leu Asp Asp Val Asn Pro
      290                 295                 300
Ser Ala Arg Phe Val Thr Val Pro Leu His His Arg Met Ala Ser Ala
305                 310                 315                 320
Ile Lys Cys Gln Tyr His Phe Ala Asp Thr Trp Met Met Phe Ser Glu
              325                 330                 335
Ile Thr Phe Gln Ser Asp Ala Ala Met Tyr Asn Asn Ser Glu Ala Leu
              340                 345                 350
Pro Thr Ser Pro Met Ala Pro Thr Thr Tyr Asp Pro Met Leu Lys Val
          355                 360                 365
Asp Asp Ser Asn Thr Arg Ile Leu Ile Gly Cys Leu Val Ala Ile Ile
      370                 375                 380
Phe Ile Leu Leu Ala Ile Ile Val Ile Ile Leu Trp Arg Gln Phe Trp
385                 390                 395                 400
Gln Lys Met Leu Glu Lys Ala Ser Arg Arg Met Leu Asp Asp Glu Met
              405                 410                 415
Thr Val Ser Leu Ser Leu Pro Ser Asp Ser Ser Met Phe Asn Asn Asn
              420                 425                 430
Arg Ser Ser Ser Pro Ser Glu Gln Gly Ser Asn Ser Thr Tyr Asp Arg
          435                 440                 445
Ile Phe Pro Leu Arg Pro Asp Tyr Gln Glu Pro Ser Arg Leu Ile Arg
      450                 455                 460
Lys Leu Pro Glu Phe Ala Pro Gly Glu Glu Glu Ser Gly Cys Ser Gly
465                 470                 475                 480
Val Val Lys Pro Val Gln Pro Ser Gly Pro Glu Gly Val Pro His Tyr
              485                 490                 495
Ala Glu Ala Asp Ile Val Asn Leu Gln Gly Val Thr Gly Gly Asn Thr
          500                 505                 510
Tyr Ser Val Pro Ala Val Thr Met Asp Leu Leu Ser Gly Lys Arg Cys
```

598

```
              515                    520                    525
Gly Cys Gly Arg Glu Phe Pro Pro Gly Lys Leu Leu Thr Phe Lys Glu
         530                 535                 540
Lys Leu Gly Glu Gly Gln Phe Gly Glu Val His Leu Cys Glu Val Glu
545                 550                 555                     560
Gly Met Glu Lys Phe Lys Asp Lys Asp Phe Ala Leu Asp Val Ser Ala
             565                 570                 575
Asn Gln Pro Val Leu Val Ala Val Lys Met Leu Arg Ala Asp Ala Asn
         580                 585                 590
Lys Asn Ala Arg Asn Asp Phe Leu Lys Glu Ile Lys Ile Met Ser Arg
         595                 600                 605
Leu Lys Asp Pro Asn Ile Ile His Leu Leu Ser Val Cys Ile Thr Asp
     610                 615                 620
Asp Pro Leu Cys Met Ile Thr Glu Tyr Met Glu Asn Gly Asp Leu Asn
625                 630                 635                     640
Gln Phe Leu Ser Arg His Glu Pro Pro Asn Ser Ser Ser Ser Asp Val
             645                 650                 655
Arg Thr Val Ser Tyr Thr Asn Leu Lys Phe Met Ala Thr Gln Ile Ala
             660                 665                 670
Ser Gly Met Lys Tyr Leu Ser Ser Leu Asn Phe Val His Arg Asp Leu
         675                 680                 685
Ala Thr Arg Asn Cys Leu Val Gly Lys Asn Tyr Thr Ile Lys Ile Ala
         690                 695                 700
Asp Phe Gly Met Ser Arg Asn Leu Tyr Ser Gly Asp Tyr Tyr Arg Ile
705                 710                 715                     720
Gln Gly Arg Ala Val Leu Pro Ile Arg Trp Met Ser Trp Glu Ser Ile
             725                 730                 735
Leu Leu Gly Lys Phe Thr Thr Ala Ser Asp Val Trp Ala Phe Gly Val
             740                 745                 750
Thr Leu Trp Glu Thr Phe Thr Phe Cys Gln Arg Lys Gly Pro Tyr Ser
         755                 760                 765
Gln Leu Ser Asp Glu Thr Gly Tyr Xaa Arg Asn Thr Gly Glu Phe Phe
     770                 775                 780
Pro Arg Pro Lys Gly Gly Gln Thr Tyr Leu Pro Ser Thr Ser Pro Phe
785                 790                 795                     800
Val Pro Asp Ser Cys Val Ile Lys Leu Met Leu Ser Cys Trp Arg Arg
             805                 810                 815
Asp Thr Lys Asn Arg Pro Ser Phe Gln Glu Ile His Leu Leu Leu Leu
         820                 825                 830
Gln Gln Gly Asp Glu Arg Cys Cys Gln Cys Leu Ala Met Phe Leu Arg
     835                 840                 845
Leu Arg Ser Ser Leu Gln Asp Leu Pro Leu Thr His Ala Tyr Ala Thr
     850                 855                 860
Pro Ser Gly His Leu Met Lys Leu Arg Asp Arg Gly Leu Phe Ala Leu
865                 870                 875                     880
Pro Ser Phe Pro Gly His Pro His Ser Leu Pro Leu Thr His Ile Tyr
             885                 890                 895
Phe Phe Phe Phe Thr Leu Lys Asn
             900                 904
```

```
     <210> 1080
     <211> 304
     <212>Amino acid
     <213> Homo sapiens




     <400> 1080
Cys Ser Ala Ser Pro Leu Arg Pro Gly Leu Leu Ala Pro Asp Leu Leu
 1               5                   10                  15
Tyr Leu Pro Gly Ala Gly Gln Pro Arg Arg Pro Glu Ala Glu Pro Gly
```

```
                20                      25                      30
Gln Lys Pro Val Val Pro Thr Leu Tyr Val Thr Glu Ala Glu Ala His
            35                      40                      45
Ser Pro Ala Leu Pro Gly Leu Ser Gly Pro Gln Pro Lys Trp Val Glu
        50                      55                      60
Val Glu Glu Thr Ile Glu Val Arg Val Lys Lys Met Gly Pro Gln Gly
65                      70                      75                      80
Val Ser Pro Thr Thr Glu Val Pro Arg Ser Ser Ser Gly His Leu Phe
                85                      90                      95
Thr Leu Pro Gly Ala Thr Pro Gly Gly Asp Pro Asn Ser Asn Asn Ser
            100                     105                     110
Asn Asn Lys Leu Leu Ala Gln Glu Ala Trp Ala Gln Gly Thr Ala Met
        115                     120                     125
Val Gly Val Arg Glu Pro Leu Val Phe Arg Val Asp Ala Arg Gly Ser
    130                     135                     140
Val Asp Trp Ala Ala Ser Gly Met Gly Ser Leu Glu Glu Glu Gly Thr
145                     150                     155                     160
Met Glu Glu Ala Gly Glu Glu Glu Gly Glu Asp Gly Asp Ala Phe Val
                165                     170                     175
Thr Glu Glu Ser Gln Asp Thr His Ser Leu Gly Asp Arg Asp Pro Lys
            180                     185                     190
Ile Leu Thr His Asn Gly Arg Met Leu Thr Leu Ala Asp Leu Glu Asp
        195                     200                     205
Tyr Val Pro Gly Glu Gly Glu Thr Phe His Cys Gly Gly Pro Gly Pro
    210                     215                     220
Gly Ala Pro Asp Asp Pro Pro Cys Glu Val Ser Val Ile Gln Arg Glu
225                     230                     235                     240
Ile Gly Glu Pro Thr Val Gly Ser Leu Cys Cys Ser Ala Trp Gly Met
            245                     250                     255
His Trp Val Pro Glu Ala Leu Ser Ala Ser Leu Gly Leu Ser Pro Met
        260                     265                     270
Gly Arg His His Arg Asp Pro Arg Ser Val Ala Leu Arg Ala Pro Pro
    275                     280                     285
Ser Ser Cys Gly Arg Pro Arg Leu Gly Leu Trp Ala Val Leu Pro Gly
    290                     295                     300                     304
```

```
<210> 1081
<211> 139
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1081
Gln Gly Leu Ala Ala Glu Phe Leu Gln Val Pro Ala Val Thr Arg Ala
1               5               10                      15
Tyr Thr Ala Ala Cys Val Leu Thr Thr Ala Ala Val Gln Leu Glu Leu
            20                      25                      30
Leu Ser Pro Phe Gln Leu Tyr Phe Asn Pro His Leu Val Phe Arg Lys
        35                      40                      45
Phe Gln Ala Pro Phe Leu Pro Trp Ala Leu Met Gly Phe Ser Leu Leu
        50                      55                      60
Leu Gly Asn Ser Ile Leu Val Asp Leu Leu Gly Ile Ala Val Gly His
65                      70                      75                      80
Ile Tyr Tyr Phe Leu Glu Asp Val Phe Pro Asn Gln Pro Gly Gly Lys
                85                      90                      95
Arg Leu Leu Gln Thr Pro Gly Phe Leu Gly Leu Gln Ser Ser Lys Ala
            100                     105                     110
Pro Ala Gly Ser Ser Leu Thr Ile Trp Thr Gln Gln Ser Gln Gly Gly
```

```
         115                      120                    125
Pro Gly Thr Ala Gly Glu Leu Ala Ala Pro Ser
    130                  135              139


     <210> 1082
     <211> 1105
     <212>Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(1105)
     <223> X = any amino acid or stop code




     <400> 1082
Glu Lys Asn Ala Leu Glu Pro Thr Val Tyr Phe Gly Met Gly Val Xaa
  1               5                  10                  15
Ala Pro Gln Val Pro Arg Phe Gln Gln Arg Ile Thr Gly Tyr Gln Tyr
              20                  25                  30
Tyr Leu Gln Leu Arg Lys Asp Ile Trp Glu Glu Gly Ile Pro Cys Thr
          35                  40                  45
Leu Glu Gln Pro Ile His Leu Ala Gly Leu Ala Val Gln Ala Ile Phe
      50                  55                  60
Gly Asp Phe Asp Gln Tyr Glu Ser Gln Asp Phe Leu Gln Lys Phe Ala
65                  70                  75                  80
Leu Phe Pro Val Gly Trp Leu Gln Asp Glu Lys Val Leu Glu Glu Ala
              85                  90                  95
Thr Gln Lys Val Ala Leu Leu His Gln Lys Tyr Arg Gly Leu Thr Ala
          100                 105                 110
Pro Asp Ala Glu Met Leu Tyr Met Gln Glu Val Glu Arg Met Asp Gly
      115                 120                 125
Tyr Gly Glu Glu Ser Tyr Pro Ala Lys Asp Ser Gln Gly Ser Asp Ile
    130                 135                 140
Ser Ile Gly Ala Cys Leu Glu Gly Ile Phe Val Lys His Lys Asn Gly
145                 150                 155                 160
Arg His Pro Val Val Phe Arg Trp His Asp Ile Ala Asn Met Ser His
              165                 170                 175
Asn Lys Ser Phe Phe Ala Leu Glu Leu Ala Asn Lys Glu Glu Thr Ile
          180                 185                 190
Gln Phe Gln Thr Glu Asp Met Glu Thr Ala Lys Tyr Ile Trp Arg Leu
      195                 200                 205
Cys Val Ala Arg His Lys Phe Tyr Arg Leu Asn Gln Cys Asn Leu Gln
    210                 215                 220
Thr Gln Thr Val Thr Val Asn Pro Ile Arg Arg Arg Ser Ser Ser Arg
225                 230                 235                 240
Met Ser Leu Pro Lys Pro Gln Pro Tyr Val Met Pro Pro Pro Gln
              245                 250                 255
Leu His Tyr Asn Gly His Tyr Thr Glu Pro Tyr Ala Ser Ser Gln Asp
          260                 265                 270
Asn Leu Phe Val Pro Asn Gln Glu Gly Tyr Tyr Gly Gln Phe Gln Thr
      275                 280                 285
Ser Leu Asn Arg Ala Gln Ile Asp Phe Asn Gly Arg Ile Arg Asn Ala
    290                 295                 300
Ser Val Tyr Ser Ala His Ser Thr Asn Ser Leu Asn Asn Pro Gln Pro
305                 310                 315                 320
Tyr Leu Gln Pro Ser Pro Met Ser Ser Asn Pro Ser Ile Thr Gly Ser
              325                 330                 335
Asp Val Met Arg Pro Asp Tyr Leu Pro Ser His Arg His Ser Ala Val
              340                 345                 350
```

601

Ile Pro Pro Ser Tyr Arg Pro Thr Pro Asp Tyr Glu Thr Val Met Lys
        355   360   365
Gln Leu Asn Arg Gly Leu Val His Ala Glu Arg Gln Ser His Ser Leu
        370   375   380
Arg Asn Leu Asn Ile Gly Ser Ser Tyr Ala Tyr Ser Arg Pro Ala Ala
385   390   395   400
Leu Val Tyr Ser Gln Pro Glu Ile Arg Glu His Ala Gln Leu Pro Ser
                405   410   415
Pro Ala Ala Ala His Cys Pro Phe Ser Leu Ser Tyr Ser Phe His Ser
                420   425   430
Pro Ser Pro Tyr Pro Tyr Pro Ala Glu Arg Arg Pro Val Val Gly Ala
        435   440   445
Val Ser Val Pro Glu Leu Thr Asn Ala Gln Leu Gln Ala Gln Asp Tyr
    450   455   460
Pro Ser Pro Asn Ile Met Arg Thr Gln Val Tyr Arg Pro Pro Pro Pro
465   470   475   480
Tyr Pro Pro Pro Arg Pro Ala Asn Ser Thr Pro Asp Leu Ser Arg His
                485   490   495
Leu Tyr Ile Ser Ser Ser Asn Pro Asp Leu Ile Thr Arg Arg Val His
            500   505   510
His Ser Val Gln Thr Phe Gln Glu Asp Ser Leu Pro Val Ala His Ser
        515   520   525
Leu Gln Glu Val Ser Glu Pro Leu Thr Ala Ala Arg His Ala Gln Leu
    530   535   540
His Lys Arg Asn Ser Ile Glu Val Ala Gly Leu Ser His Gly Leu Glu
545   550   555   560
Gly Leu Arg Leu Lys Glu Arg Thr Leu Ser Ala Ser Ala Ala Glu Val
                565   570   575
Ala Pro Arg Ala Val Ser Val Gly Ser Gln Pro Ser Val Phe Thr Glu
            580   585   590
Arg Thr Gln Arg Glu Gly Pro Glu Glu Ala Glu Gly Leu Arg Tyr Gly
        595   600   605
His Lys Lys Ser Leu Ser Asp Ala Thr Met Leu Ile His Ser Ser Glu
    610   615   620
Glu Glu Glu Asp Glu Asp Phe Glu Glu Glu Ser Gly Ala Arg Ala Pro
625   630   635   640
Pro Ala Arg Ala Arg Glu Pro Arg Pro Gly Leu Ala Gln Asp Pro Pro
                645   650   655
Gly Cys Pro Arg Val Leu Leu Ala Gly Pro Leu His Ile Leu Glu Pro
            660   665   670
Lys Ala His Val Pro Asp Ala Glu Lys Arg Met Met Asp Ser Ser Pro
        675   680   685
Val Arg Thr Thr Ala Glu Ala Gln Arg Pro Trp Arg Asp Gly Leu Leu
    690   695   700
Met Pro Ser Met Ser Glu Ser Asp Leu Thr Thr Ser Gly Arg Tyr Arg
705   710   715   720
Ala Arg Arg Asp Ser Leu Lys Lys Arg Pro Val Ser Asp Leu Leu Ser
                725   730   735
Gly Lys Lys Asn Ile Val Glu Gly Leu Pro Pro Leu Gly Gly Met Lys
            740   745   750
Lys Thr Arg Val Asp Ala Lys Lys Ile Gly Pro Leu Lys Leu Ala Ala
        755   760   765
Leu Asn Gly Leu Ser Leu Ser Arg Val Pro Leu Pro Asp Glu Gly Lys
    770   775   780
Glu Val Ala Thr Arg Ala Thr Asn Asp Glu Arg Cys Lys Ile Leu Glu
785   790   795   800
Gln Arg Leu Glu Gln Gly Met Val Phe Thr Glu Tyr Glu Arg Ile Leu
                805   810   815
Lys Lys Arg Leu Val Asp Gly Glu Cys Ser Thr Ala Arg Leu Pro Glu
        820   825   830
Asn Ala Glu Arg Asn Arg Phe Gln Asp Val Leu Pro Tyr Asp Asp Val
    835   840   845
Arg Val Glu Leu Val Pro Thr Lys Glu Asn Asn Thr Gly Tyr Ile Asn
850   855   860

```
Ala Ser His Ile Lys Val Ser Val Ser Gly Ile Glu Trp Asp Tyr Ile
865             870             875             880
Ala Thr Gln Gly Pro Leu Gln Asn Thr Cys Gln Asp Phe Trp Gln Met
            885             890             895
Val Trp Glu Gln Gly Ile Ala Ile Ile Ala Met Val Thr Ala Glu Glu
            900             905             910
Glu Gly Gly Arg Glu Lys Ser Phe Arg Tyr Trp Pro Arg Leu Gly Ser
        915             920             925
Arg His Asn Thr Val Thr Tyr Gly Arg Phe Lys Ile Thr Thr Arg Phe
    930             935             940
Arg Thr Asp Ser Gly Cys Tyr Ala Thr Thr Gly Leu Lys Met Lys His
945             950             955             960
Leu Leu Thr Gly Gln Glu Arg Thr Val Trp His Leu Gln Tyr Thr Asp
            965             970             975
Trp Pro Glu His Gly Cys Pro Glu Asp Leu Lys Gly Phe Leu Ser Tyr
        980             985             990
Leu Glu Glu Ile Gln Ser Val Arg Arg His Thr Asn Ser Thr Ser Asp
        995             1000            1005
Pro Gln Ser Pro Asn Pro Pro Leu Leu Val His Cys Ser Ala Gly Val
    1010            1015            1020
Gly Arg Thr Gly Val Val Ile Leu Ser Glu Ile Met Ile Ala Cys Leu
1025            1030            1035            1040
Glu His Asn Glu Val Leu Asp Ile Pro Arg Val Leu Asp Met Leu Arg
            1045            1050            1055
Gln Gln Arg Met Met Leu Val Gln Thr Leu Cys Gln Tyr Thr Phe Val
        1060            1065            1070
Tyr Arg Val Leu Ile Gln Val Pro Glu Lys Ala Pro Arg Leu Ile Leu
        1075            1080            1085
Ser Ser Pro Gln Phe Pro Tyr Gly Ala Gln Ser Cys Glu Ala Phe Thr
    1090            1095            1100
Ala
1105
```

```
<210> 1083
<211> 99
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(99)
<223> X = any amino acid or stop code
```

```
<400> 1083
Arg Lys Lys Gln Lys Leu Ala Glu Glu Xaa Val Glu Leu Ser Lys Leu
1           5               10              15
Ala Asp Leu Lys Asp Ala Glu Ala Val Gln Lys Phe Phe Leu Glu Glu
            20              25              30
Ile Xaa Leu Gly Glu Glu Ile Leu Ala Lys Gly Val Asp His Leu Thr
        35              40              45
Asn Pro Ser Ala Val Cys Gly Gln Pro Gln Trp Leu Leu Gln Val Leu
    50              55              60
Gln Gln Thr Leu Pro Leu Pro Val Ile Gln Met Leu Leu Thr Lys Pro
65              70              75              80
Leu Pro Val Asn Gln Arg Leu Val Ser Ala Gly Ser Leu Ala Lys Asp
            85              90              95
Asp Val Glu
        99
```

<210> 1084
<211> 206
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(206)
<223> X = any amino acid or stop code

<400> 1084

```
Ser Phe Cys Leu His Glu Phe Gly Trp Leu Gly Ser Ser Pro Gln Ser
 1               5                  10                  15
Asp His Pro Val Pro Ala Leu Leu Gly Leu Gly Ala Phe Val His His
             20                  25                  30
Ser Leu Leu Gln Val His Ser Ser Pro Gly Ala Gly Pro Val Ser Phe
         35                  40                  45
Leu Phe Leu Gly Glu Ser Cys Ser Pro Val Asp Glu Pro Arg Cys Val
     50                  55                  60
Pro Ser Cys Ala Phe Gly Phe Leu Ser Cys Phe Pro Leu Leu Asn Ser
 65                  70                  75                  80
Ala Ala Leu Glu Arg Gly Leu Phe Phe Phe Val Val Phe Phe Phe Leu
             85                  90                  95
Glu Ser Gly Ser Cys Gln Val Ala Arg Ala Gly Val Arg Asp Arg Asp
            100                 105                 110
Arg Gly Ser Leu Gln Pro Pro Pro Gly Leu Lys Gln Phe Cys Leu
        115                 120                 125
Ser Leu Pro Ser Arg Trp Asp His Arg His Pro Pro Pro Leu Arg Val
    130                 135                 140
Pro Xaa Phe Val Phe Val Phe Leu Val Glu Leu Gly Phe His His Val
145                 150                 155                 160
Ala Gln Ala Gly Leu Lys Leu Leu Thr Leu Ser Asp Pro Pro Ala Pro
            165                 170                 175
Ala Ser His Ser Ala Gly Ile Thr Gly Val Ser Gln Arg Asp Gln Pro
        180                 185                 190
Val Leu Phe Leu Arg Trp Ala Ser Cys Ser Glu Leu Val Gly
    195                 200                 205 206
```

<210> 1085
<211> 99
<212> Amino acid
<213> Homo sapiens

<400> 1085

```
Glu Gly Phe Pro Gly Arg Ser Leu Ser Gly Gly Leu Cys Cys Arg Leu
 1               5                  10                  15
Arg Arg Arg Phe Pro Ile Asp Gly Tyr Arg Pro Arg Arg Arg Arg Arg
             20                  25                  30
Trp Ser Cys Cys Pro Ser Gly Val Arg Pro Val Arg Arg Met Ser Gln
         35                  40                  45
Lys Ser Trp Ile Glu Ser Thr Leu Thr Lys Arg Glu Cys Val Tyr Ile
     50                  55                  60
Ile Pro Ser Ser Lys Asp Pro His Arg Cys Leu Pro Gly Cys Gln Ile
 65                  70                  75                  80
```

```
Cys Gln Gln Leu Val Arg Arg Gly Phe Thr Val Leu Ala Arg Met Val
                 85              90                  95
Ser Ile Ser
         99


    <210> 1086
    <211> 53
    <212>Amino acid
    <213> Homo sapiens




    <400> 1086
Gln Asn Ser Thr Cys Leu Thr Ala Gln Thr His Ser Leu Leu Gln His
1                5               10                  15
Gln Pro Leu Gln Leu Thr Thr Leu Leu Asp Gln Tyr Ile Arg Glu Gln
         20              25                  30
Arg Glu Lys Asp Ser Val Met Ser Ala Asn Gly Lys Pro Asp Pro Asp
         35              40                  45
Thr Val Pro Asp Ser
     50          53


    <210> 1087
    <211> 250
    <212>Amino acid
    <213> Homo sapiens




    <400> 1087
Leu Asn Pro Trp Lys Asn Ala Leu Gln Asp Phe Cys Leu Pro Phe Leu
1                5               10                  15
Arg Ile Thr Ser Leu Leu Gln His His Leu Phe Gly Glu Asp Leu Pro
         20              25                  30
Ser Cys Gln Glu Glu Glu Glu Phe Ser Val Leu Ala Ser Cys Leu Gly
         35              40                  45
Leu Leu Pro Thr Phe Tyr Gln Thr Glu His Pro Phe Ile Ser Ala Ser
     50              55                  60
Cys Leu Asp Trp Pro Val Pro Ala Phe Asp Ile Ile Thr His Trp Cys
65              70              75                  80
Phe Glu Ile Lys Ser Phe Thr Glu Arg His Ala Glu Gln Gly Lys Ala
                 85              90                  95
Leu Leu Ile Gln Glu Ser Lys Trp Lys Leu Pro His Leu Leu Gln Leu
             100             105                 110
Pro Glu Asn Tyr Asn Thr Ile Phe Gln Tyr Tyr His Arg Lys Thr Cys
         115             120                 125
Ser Val Cys Thr Lys Val Pro Lys Asp Pro Ala Val Cys Leu Val Cys
         130             135                 140
Gly Thr Phe Val Cys Leu Lys Gly Leu Cys Cys Lys Gln Gln Ser Tyr
145             150             155                 160
Cys Glu Cys Val Leu His Ser Gln Asn Cys Gly Ala Gly Thr Gly Ile
             165             170                 175
Phe Leu Leu Ile Asn Ala Ser Val Ile Ile Ile Arg Gly His Arg
             180             185                 190
Phe Cys Leu Trp Gly Ser Val Tyr Leu Asp Ala His Gly Glu Glu Asp
         195             200                 205
Arg Asp Leu Arg Arg Gly Lys Pro Leu Tyr Ile Cys Lys Glu Arg Tyr
     210             215                 220
```

```
Lys Val Leu Glu Gln Gln Trp Ile Ser His Thr Phe Asp His Ile Asn
225                     230                 235                 240
Lys Arg Trp Gly Pro His Tyr Asn Gly Leu
                245                 250
```

```
<210> 1088
<211> 455
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1088
Lys Gly Gln Leu Val Asn Leu Leu Pro Pro Glu Asn Phe Pro Trp Cys
  1               5                  10                  15
Gly Gly Ser Gln Gly Pro Arg Met Leu Arg Thr Cys Tyr Val Leu Cys
            20              25                  30
Ser Gln Ala Gly Pro Arg Ser Arg Gly Trp Gln Ser Leu Ser Phe Asp
        35                  40                  45
Gly Gly Ala Phe His Leu Lys Gly Thr Gly Glu Leu Thr Arg Ala Leu
    50                  55                  60
Leu Val Leu Arg Leu Cys Ala Trp Pro Pro Leu Val Thr His Gly Leu
65                  70                  75                  80
Leu Leu Gln Ala Trp Ser Arg Arg Leu Leu Gly Ser Arg Leu Ser Gly
                85                  90                  95
Ala Phe Leu Arg Ala Ser Val Tyr Gly Gln Phe Val Ala Gly Glu Thr
            100                 105                 110
Ala Glu Glu Val Lys Gly Cys Val Gln Gln Leu Arg Thr Leu Ser Leu
        115                 120                 125
Arg Pro Leu Leu Ala Val Pro Thr Glu Glu Pro Asp Ser Ala Ala
    130                 135                 140
Lys Ser Gly Glu Ala Trp Tyr Glu Gly Asn Leu Gly Ala Met Leu Arg
145                 150                 155                 160
Cys Val Asp Leu Ser Arg Gly Leu Leu Glu Pro Pro Ser Leu Ala Glu
                165                 170                 175
Ala Ser Leu Met Gln Leu Lys Val Thr Ala Leu Thr Ser Thr Arg Leu
            180                 185                 190
Cys Lys Glu Leu Ala Ser Trp Val Arg Arg Pro Gly Ala Ser Leu Glu
        195                 200                 205
Leu Ser Pro Glu Arg Leu Ala Glu Ala Met Asp Ser Gly Gln Asn Leu
    210                 215                 220
Gln Val Ser Cys Leu Asn Ala Glu Gln Asn Gln His Leu Arg Ala Ser
225                 230                 235                 240
Leu Ser Arg Leu His Arg Val Ala Gln Tyr Ala Arg Ala Gln His Val
                245                 250                 255
Arg Leu Leu Val Asp Ala Glu Tyr Thr Ser Leu Asn Pro Ala Leu Ser
            260                 265                 270
Leu Leu Val Ala Ala Leu Ala Val Arg Trp Asn Ser Pro Gly Glu Gly
        275                 280                 285
Gly Pro Trp Val Trp Asn Thr Tyr Gln Ala Cys Leu Lys Asp Thr Phe
    290                 295                 300
Glu Arg Leu Gly Arg Asp Ala Glu Ala Ala His Arg Ala Gly Leu Ala
305                 310                 315                 320
Phe Gly Val Lys Leu Val Arg Gly Ala Tyr Leu Asp Lys Glu Arg Ala
            325                 330                 335
Val Ala Gln Leu His Gly Met Glu Asp Pro Pro Thr Gln Ala Asp Tyr
        340                 345                 350
Glu Ala Thr Ser Gln Ser Tyr Ser Arg Cys Leu Glu Leu Met Leu Thr
    355                 360                 365
His Val Ala Arg His Gly Pro Met Cys His Leu Met Val Ala Ser His
370                 375                 380
```

```
Asn Glu Glu Ser Val Arg Gln Ala. Thr Lys Gly Gln Ala Gly Tyr Val
385             390             395             400
Val Tyr Lys Ser Ile Pro Tyr Gly Ser Leu Glu Glu Val Ile Pro Tyr
                405             410             415
Leu Ile Arg Arg Ala Gln Glu Asn Arg Ser Val Leu Gln Gly Ala Arg
            420             425             430
Arg Glu Gln Glu Leu Leu Ser Gln Lys Leu Trp Arg Arg Leu Leu Pro
        435             440             445
Gly Cys Arg Arg Ile Pro His
    450             455
```

```
<210> 1089
<211> 243
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(243)
<223> X = any amino acid or stop code
```

```
<400> 1089
Val Val Glu Phe Gly Glu Met Ser Thr Ala Arg Ala Pro Glu Gly Leu
1               5               10              15
Arg Trp Phe Gln Leu Tyr Val His Pro Asp Leu Gln Leu Asn Lys Gln
            20              25              30
Leu Ile Gln Arg Val Glu Ser Leu Gly Phe Lys Ala Leu Val Ile Thr
        35              40              45
Leu Asp Thr Pro Val Cys Gly Asn Arg Arg His Asp Ile Arg Asn Gln
    50              55              60
Leu Arg Arg Asn Leu Thr Leu Thr Asp Leu Gln Ser Pro Lys Lys Gly
65              70              75              80
Asn Ala Ile Pro Tyr Phe Gln Met Thr Pro Ile Ser Thr Ser Leu Cys
            85              90              95
Trp Asn Asp Leu Ser Trp Phe Gln Ser Ile Thr Arg Leu Pro Ile Ile
            100             105             110
Leu Lys Gly Ile Leu Thr Lys Glu Asp Ala Glu Leu Ala Val Lys His
        115             120             125
Asn Val Gln Gly Ile Ile Val Ser Asn His Gly Gly Arg Gln Leu Asp
    130             135             140
Glu Val Leu Ala Ser Ile Asp Ala Leu Thr Glu Val Gly Ala Ala Glu
145             150             155             160
Xaa Gly Asn Met Lys Tyr Tyr Leu Asp Ala Gly Val Arg Thr Gly Asn
            165             170             175
Asp Val Gln Lys Ala Leu Ala Leu Gly Ala Lys Cys Ile Phe Leu Gly
            180             185             190
Arg Pro Ile Leu Trp Gly Leu Ala Cys Lys Gly Glu His Gly Val Lys
        195             200             205
Glu Val Leu Asn Ile Leu Thr Asn Glu Phe His Thr Ser Met Ala Leu
    210             215             220
Thr Gly Cys Arg Ser Val Ala Glu Ile Asn Arg Asn Leu Val Gln Phe
225             230             235             240
Ser Arg Leu
    243
```

```
<210> 1090
<211> 90
<212>Amino acid
```

607

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(90)
<223> X = any amino acid or stop code

<400> 1090

```
Phe Phe Leu Arg Trp Ser Phe Thr Leu Leu Pro Arg Leu Glu Cys Gln
 1               5                   10                  15
Trp Leu Asn Leu Gly Ser Leu Gln Pro Pro Pro Gly Phe Lys Xaa
            20                  25                  30
Ser Ser Cys Leu Arg Leu Leu Ser Ser Trp Gly Leu Gln Val Pro Thr
        35                  40                  45
Ser Met Leu Gly Xaa Phe Phe Cys Ile Phe Ser Arg Glu Gly Ile Ser
    50                  55                  60
Pro Cys Trp Pro Gly Trp Ser Gln Thr Pro Lys Val Ile His Leu Pro
65                  70                  75                  80
Arg Pro Pro Arg Val Leu Arg Leu Gln Ala
                85                  90
```

<210> 1091
<211> 259
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(259)
<223> X = any amino acid or stop code

<400> 1091

```
Leu Leu Cys Phe Val His Thr Ala Leu Gln Ser Phe Gln Gly Glu Leu
 1               5                   10                  15
Tyr Glu Pro His Val Val Ile Ala Ile Val Val Phe Leu Val Lys Leu
            20                  25                  30
Gly Ile Cys Lys Xaa Arg Ala Ser Trp Arg Lys Lys Val Thr Leu Val
        35                  40                  45
Val Lys Xaa Ser Leu Lys Ile Cys Phe Thr Lys Tyr Gly Ser Cys Tyr
    50                  55                  60
His Pro Gly Glu Lys Ser Ser Ser Trp Leu Phe Asn Xaa Arg Met Val
65                  70                  75                  80
Asn Asp Cys Leu Ala Thr Ser Cys Ser Asn Arg Ser Phe Val Ile Gln
                85                  90                  95
Gln Ile Pro Ser Ser Asn Leu Phe Met Val Val Val Asp Ser Ser Cys
            100                 105                 110
Leu Cys Glu Ser Val Ala Pro Ile Thr Met Ala Pro Ile Glu Ile Arg
    115                 120                 125
Tyr Ile Leu Leu Cys Ala Gly Pro Leu Thr Thr Thr Glu Thr Ser Lys
130                 135                 140
Gly Tyr Gln Trp Xaa Gly Asn Leu Gly Glu Lys Tyr Xaa Arg Arg Lys
145                 150                 155                 160
Ile Thr Ser Phe Pro Leu Leu Glu Arg Glu Ser Ser Xaa Glu Ser Cys
                165                 170                 175
His Cys Gln Ile Leu Thr Ser Glu Met Gln Ser Arg Lys Lys Gln Ser
```

```
                    180                      185                      190
Leu Glu Thr Cys Leu Asn Tyr Ser Gln His Asn Glu Ser Leu Lys Cys
        195                      200                      205
Glu Arg Leu Lys Ala Gln Lys Ile Arg Arg Arg Pro Glu Ser Cys His
    210                      215                      220
Gly Phe His Pro Glu Glu Asn Ala Arg Glu Cys Gly Gly Ala Pro Ser
225                      230                      235                      240
Leu Gln Ala Gln Thr Val Leu Leu Leu Leu Pro Leu Leu Leu Met Leu
                245                      250                      255
Phe Ser Arg
        259
```

```
        <210> 1092
        <211> 117
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(117)
        <223> X = any amino acid or stop code
```

```
        <400> 1092
Val Pro Ser Pro Thr His Asp Pro Lys Pro Ala Glu Ala Pro Met Pro
1                    5                       10                      15
Ala Xaa Pro Ala Pro Pro Gly Pro Ala Ser Pro Gly Gly Ala Leu Glu
            20                      25                      30
Pro Pro Ala Ala Ala Arg Ala Gly Gly Ser Pro Thr Ala Val Arg Ser
        35                      40                      45
Ile Leu Thr Lys Glu Arg Arg Pro Glu Gly Gly Tyr Lys Ala Val Trp
    50                      55                      60
Phe Gly Glu Asp Ile Gly Thr Glu Ala Asp Val Val Val Leu Asn Ala
65                      70                      75                      80
Pro Thr Leu Asp Val Asp Gly Ala Ser Asp Ser Gly Ser Gly Asp Glu
            85                      90                      95
Gly Glu Gly Ala Gly Arg Gly Gly Pro Tyr Asp Ala Pro Gly Gly
            100                     105                     110
Asp Asp Ser Tyr Ile
        115     117
```

```
        <210> 1093
        <211> 763
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1093
Leu Ile Ser Leu Ala Gly Pro Thr Asp Asp Ile Gln Ser Thr Gly Pro
1                    5                       10                      15
Gln Val His Ala Leu Asn Ile Leu Arg Ala Leu Phe Arg Asp Thr Arg
            20                      25                      30
Leu Gly Glu Asn Ile Ile Pro Tyr Val Ala Asp Gly Ala Lys Ala Ala
        35                      40                      45
Ile Leu Gly Phe Thr Ser Pro Val Trp Ala Val Arg Asn Ser Ser Thr
    50                      55                      60
```

```
Leu Leu Phe Ser Ala Leu Ile Thr Arg Ile Phe Gly Val Lys Arg Ala
 65              70                      75                      80
Lys Asp Glu His Ser Lys Thr Asn Arg Met Thr Gly Arg Glu Phe Phe
                85                      90                      95
Ser Arg Phe Pro Glu Leu Tyr Pro Phe Leu Leu Lys Gln Leu Glu Thr
            100                     105                     110
Val Ala Asn Thr Val Asp Ser Asp Met Gly Glu Pro Asn Arg His Pro
        115                     120                     125
Ser Met Phe Leu Leu Leu Leu Val Leu Glu Arg Leu Tyr Ala Ser Pro
    130                 135                     140
Met Asp Gly Thr Ser Ser Ala Leu Ser Met Gly Pro Phe Val Pro Phe
145                 150                     155                 160
Ile Met Arg Cys Gly His Ser Pro Val Tyr His Ser Arg Glu Met Ala
            165                     170                     175
Ala Arg Ala Leu Val Pro Phe Val Met Ile Asp His Ile Pro Asn Thr
            180                     185                     190
Ile Arg Thr Leu Leu Ser Thr Leu Pro Ser Cys Thr Asp Gln Cys Phe
            195                     200                     205
Arg Gln Asn His Ile His Gly Thr Leu Leu Gln Val Phe His Leu Val
        210                     215                     220
Gln Ala Tyr Ser Asp Ser Lys His Gly Thr Asn Ser Asp Phe Gln His
225                 230                     235                 240
Glu Leu Thr Asp Ile Thr Val Cys Thr Lys Ala Lys Leu Trp Leu Ala
            245                     250                     255
Lys Arg Gln Asn Pro Cys Leu Val Thr Arg Ala Val Tyr Ile Asp Ile
            260                     265                     270
Leu Phe Leu Leu Thr Cys Cys Leu Asn Arg Ser Ala Lys Asp Asn Gln
            275                     280                     285
Pro Val Leu Glu Ser Leu Gly Phe Trp Glu Glu Val Arg Gly Ile Ile
    290                 295                     300
Ser Gly Ser Glu Leu Ile Thr Gly Phe Pro Trp Ala Phe Lys Val Pro
305                 310                     315                 320
Gly Leu Pro Gln Tyr Leu Gln Ser Leu Thr Arg Leu Ala Ile Ala Ala
            325                     330                     335
Val Trp Ala Ala Ala Ala Lys Ser Gly Glu Arg Glu Thr Asn Val Pro
            340                     345                     350
Ile Ser Phe Ser Gln Leu Leu Glu Ser Ala Phe Pro Glu Val Arg Ser
            355                     360                     365
Leu Thr Leu Glu Ala Leu Leu Glu Lys Phe Leu Ala Ala Ala Ser Gly
    370                 375                     380
Leu Gly Glu Lys Gly Val Pro Pro Leu Leu Cys Asn Met Gly Glu Lys
385                 390                     395                 400
Phe Leu Leu Leu Ala Met Lys Glu Asn His Pro Glu Cys Phe Cys Lys
            405                     410                     415
Ile Leu Lys Ile Leu His Cys Met Asp Pro Gly Glu Trp Leu Pro Gln
            420                     425                     430
Thr Glu His Cys Val His Leu Thr Pro Lys Glu Phe Leu Ile Trp Thr
        435                     440                     445
Met Asp Ile Ala Ser Asn Glu Arg Ser Glu Ile Gln Ser Val Ala Leu
    450                 455                     460
Arg Leu Ala Ser Lys Val Ile Ser His His Met Gln Thr Cys Val Glu
465                 470                     475                 480
Asn Arg Glu Leu Ile Ala Ala Glu Leu Lys Gln Trp Val Gln Leu Val
            485                     490                     495
Ile Leu Ser Cys Glu Asp His Leu Pro Thr Glu Ser Arg Leu Ala Val
            500                     505                     510
Val Glu Val Leu Thr Ser Thr Thr Pro Leu Phe Leu Thr Asn Pro His
        515                     520                     525
Pro Ile Leu Glu Leu Gln Asp Thr Leu Ala Leu Trp Lys Cys Val Leu
    530                 535                     540
Thr Leu Leu Gln Ser Glu Glu Gln Ala Val Arg Asp Ala Ala Thr Glu
545                 550                     555                 560
Thr Val Thr Thr Ala Met Ser Gln Glu Asn Thr Cys Gln Ser Thr Glu
                565                     570                     575
```

```
Phe Ala Phe Cys Gln Val Asp Ala Ser Ile Ala Leu Ala Leu Ala Leu
              580             585             590
Ala Val Leu Cys Asp Leu Leu Gln Gln Trp Asp Gln Leu Ala Pro Gly
          595             600             605
Leu Pro Ile Leu Leu Gly Trp Leu Leu Gly Glu Ser Asp Asp Leu Val
      610             615             620
Ala Cys Val Glu Ser Met His Gln Val Glu Glu Asp Tyr Leu Phe Glu
625             630             635             640
Lys Ala Glu Val Asn Phe Trp Ala Glu Thr Leu Ile Phe Val Lys Tyr
              645             650             655
Leu Cys Lys His Leu Phe Cys Leu Leu Ser Lys Ser Gly Trp Arg Pro
          660             665             670
Pro Ser Pro Glu Met Leu Cys His Leu Gln Arg Met Val Ser Glu Gln
      675             680             685
Cys His Leu Leu Ser Gln Phe Phe Arg Glu Leu Pro Pro Ala Ala Glu
      690             695             700
Phe Val Lys Thr Val Glu Phe Thr Arg Leu Arg Ile Gln Glu Glu Arg
705             710             715             720
Thr Leu Ala Cys Leu Arg Leu Leu Ala Phe Leu Glu Gly Lys Glu Gly
              725             730             735
Glu Asp Thr Leu Val Leu Ser Val Trp Asp Ser Tyr Ala Glu Ser Arg
              740             745             750
Gln Leu Thr Leu Pro Arg Thr Glu Ala Ala Cys
              755             760     763


        <210> 1094
        <211> 413
        <212>Amino acid
        <213> Homo sapiens



        <400> 1094
His Ala Phe Arg Pro Ile Ala Leu Gln Arg Gly Val Ser Phe Arg Gly
1               5               10              15
Cys Ser Asn Gln Tyr Ala Glu Ser Arg Arg Leu Gln Gly Glu Ser Gly
          20              25              30
Ser Arg Ala Phe Ala His Leu Met Glu Ser Leu Leu Gln His Leu Asp
      35              40              45
Arg Phe Ser Glu Leu Leu Ala Val Ser Ser Thr Thr Tyr Val Ser Thr
      50              55              60
Trp Asp Pro Ala Thr Val Arg Arg Ala Leu Gln Trp Ala Arg Tyr Leu
65              70              75              80
Arg His Ile His Arg Arg Phe Gly Arg His Gly Pro Ile Arg Thr Ala
              85              90              95
Leu Glu Arg Arg Leu His Asn Gln Trp Arg Gln Glu Gly Gly Phe Gly
          100             105             110
Arg Gly Pro Val Pro Gly Leu Ala Asn Phe Gln Ala Leu Gly His Cys
      115             120             125
Asp Val Leu Leu Ser Leu Arg Leu Leu Glu Asn Arg Ala Leu Gly Asp
      130             135             140
Ala Ala Arg Tyr His Leu Val Gln Gln Leu Phe Pro Gly Pro Gly Val
145             150             155             160
Arg Asp Ala Asp Glu Glu Thr Leu Gln Glu Ser Leu Ala Arg Leu Ala
              165             170             175
Arg Arg Arg Ser Ala Val His Met Leu Arg Phe Asn Gly Tyr Arg Glu
          180             185             190
Asn Pro Asn Leu Gln Glu Asp Ser Leu Met Lys Thr Gln Ala Glu Leu
          195             200             205
Leu Leu Glu Arg Leu Gln Glu Val Gly Lys Ala Glu Ala Glu Arg Pro
      210             215             220
```

```
Ala Arg Phe Leu Ser Ser Leu Trp Glu Arg Leu Pro Gln Asn Asn Phe
225                 230                 235                 240
Leu Lys Val Ile Ala Val Ala Leu Leu Gln Pro Pro Leu Ser Arg Arg
                245                 250                 255
Pro Gln Glu Glu Leu Glu Pro Gly Ile His Lys Ser Pro Gly Glu Gly
                260                 265                 270
Ser Gln Val Leu Val His Trp Leu Leu Gly Asn Ser Glu Val Phe Ala
            275                 280                 285
Ala Phe Cys Arg Ala Leu Pro Ala Gly Leu Leu Thr Leu Val Thr Ser
    290                 295                 300
Arg His Pro Ala Leu Ser Pro Val Tyr Leu Gly Leu Leu Thr Asp Trp
305                 310                 315                 320
Gly Gln Arg Leu His Tyr Asp Leu Gln Lys Gly Ile Trp Val Gly Thr
                325                 330                 335
Glu Ser Gln Asp Val Pro Trp Glu Glu Leu His Asn Arg Phe Gln Ser
            340                 345                 350
Leu Cys Gln Ala Pro Pro Pro Leu Lys Asp Lys Val Leu Thr Ala Leu
    355                 360                 365
Glu Thr Cys Lys Ala Gln Asp Gly Asp Phe Glu Glu Pro Gly Leu Ser
370                 375                 380
Ile Trp Thr Asp Leu Leu Leu Ala Leu Arg Ser Gly Ala Phe Arg Lys
385                 390                 395                 400
Arg Gln Val Leu Gly Leu Ser Ala Gly Leu Ser Ser Val
                405                 410         413
```

<210> 1095
<211> 344
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(344)
<223> X = any amino acid or stop code

<400> 1095

```
Ser His Leu Ile Gln His Gln Arg Ile His Thr Xaa Glu Xaa Ala His
1               5               10              15
Glu Cys Asn Glu Cys Gly Lys Ala Phe Ser Gln Thr Ser Cys Leu Ile
            20              25              30
Gln His His Lys Met His Arg Lys Glu Lys Ser Tyr Glu Cys Asn Glu
        35              40              45
Tyr Glu Gly Ser Phe Ser His Ser Ser Asp Leu Ile Leu Gln Gln Glu
    50              55              60
Val Leu Thr Arg Gln Lys Ala Phe Asp Cys Asp Val Trp Glu Lys Asn
65              70              75              80
Ser Ser Gln Arg Ala His Leu Val Gln His Gln Ser Ile His Thr Lys
            85              90              95
Glu Lys Pro His Glu Cys Asn Glu Asp Gly Lys Ile Phe Asn Gln Ile
        100             105             110
Gln Ala Leu Ile Gln His Leu Arg Val His Thr Arg Glu Lys Tyr Val
    115             120             125
Cys Thr Ala Cys Gly Lys Ala Phe Ser His Ser Ser Ala Ile Ala Gln
    130             135             140
His Gln Ile Ile His Thr Arg Glu Lys Pro Ser Glu Cys Asp Glu Xaa
145             150             155             160
Arg Lys Gly Ile Ser Val Lys Leu Leu Ile Asp Ser Cys Arg Ile Tyr
            165             170             175
Thr Ser Glu Lys Ser Tyr Lys Cys Ile Glu Cys Gly Lys Phe Phe Met
```

612

```
                    180                      185                      190
Leu Leu Val Phe Ser Tyr Leu Ser His Ile Trp Arg Ile His Met Gly
            195                      200                      205
Ile Lys Phe His Cys Cys Asn Glu Cys Glu Lys Ala Ile Ser Gln Arg
    210                      215                      220
Asn Tyr Leu Val Xaa Tyr Gln Ile His Ala Met Gln Lys Asp Tyr Lys
225                      230                      235                      240
Cys Asn Glu Ala Cys Met Cys Val Arg Arg Phe Ser His Asn Pro Thr
                245                      250                      255
Leu Ile Gln His Gln Arg Ile Tyr Thr Xaa Glu Asn Leu Phe Gly Cys
            260                      265                      270
Ser Lys Cys Gly Arg Ser Phe Asn Arg Ser Leu Thr Ser Leu Cys His
            275                      280                      285
Ile Arg Ile Ser Ile Arg Arg Gln Glu Phe Asp Val Thr Gln Met Glu
    290                      295                      300
Lys Leu Asp Thr Thr Phe Gln Ala Ser Thr Gln His Arg Asn Asn Gly
305                      310                      315                      320
Glu Lys Ile Val Asp Tyr Leu Phe Met Lys Leu Leu Ile His Ser Pro
                325                      330                      335
Asn Leu Phe His Cys Thr Lys Ile
                340                      344
```

```
    <210> 1096
    <211> 76
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1096
Ala Val Thr Leu Thr Ala Lys Ile Cys Ser Phe Thr Pro Glu Pro Ser
1               5                    10                       15
Glu Thr Met Ser Pro Pro Ala Gly Thr Asn Asn Ser Arg His Ala Ala
            20                       25                       30
Leu Arg Ala Val Thr Leu Pro Val Lys Val Cys Ser Phe Thr Pro Glu
        35                       40                       45
Pro Ala Arg Ser Arg Thr His Gln Lys Glu Glu Thr Pro Asn Thr Ser
    50                       55                       60
Glu His Gln Lys Glu Gln Thr Pro Glu Ala Pro Pro
65                       70                       75  76
```

```
    <210> 1097
    <211> 1462
    <212>Amino acid
    <213> Homo sapiens
```

```
    <220>
    <221> misc_feature
    <222> (1)...(1462)
    <223> X = any amino acid or stop code
```

```
    <400> 1097
Met Ala Tyr Ser Trp Gln Thr Asp Pro Asn Pro Asn Glu Ser His Glu
1               5                    10                       15
Lys Gln Tyr Glu His Gln Glu Phe Leu Phe Val Asn Gln Pro His Ser
            20                       25                       30
```

613

```
Ser Ser Gln Val Ser Leu Gly Phe Asp Gln Ile Val Asp Glu Ile Ser
        35                      40                      45
Gly Lys Ile Pro His Tyr Glu Ser Glu Ile Asp Glu Asn Thr Phe Phe
        50                      55                      60
Val Pro Thr Ala Pro Lys Trp Asp Ser Thr Gly His Ser Leu Asn Glu
    65                      70                      75                      80
Ala His Gln Ile Ser Leu Asn Glu Phe Thr Ser Lys Ser Arg Glu Leu
                85                      90                      95
Ser Trp His Gln Val Ser Lys Ala Pro Ala Ile Gly Phe Ser Pro Ser
                100                     105                     110
Val Leu Pro Lys Pro Gln Asn Thr Asn Lys Glu Cys Ser Trp Gly Ser
        115                     120                     125
Pro Ile Gly Lys His His Gly Ala Asp Asp Ser Arg Phe Ser Ile Leu
        130                     135                     140
Ala Pro Ser Phe Thr Ser Leu Asp Lys Ile Asn Leu Glu Lys Glu Leu
145                     150                     155                     160
Glu Asn Glu Asn His Asn Tyr His Ile Gly Phe Glu Ser Ser Ile Pro
                165                     170                     175
Pro Thr Asn Ser Ser Phe Ser Ser Asp Phe Met Pro Lys Glu Glu Asn
                180                     185                     190
Lys Arg Ser Gly His Val Asn Ile Val Glu Pro Ser Leu Met Leu Leu
        195                     200                     205
Lys Gly Ser Leu Gln Pro Gly Met Trp Glu Ser Thr Trp Gln Lys Asn
        210                     215                     220
Ile Glu Ser Ile Gly Cys Ser Ile Gln Leu Val Glu Val Pro Gln Ser
225                     230                     235                     240
Ser Asn Thr Ser Leu Ala Ser Phe Cys Asn Lys Val Lys Lys Ile Arg
                245                     250                     255
Glu Arg Tyr His Ala Ala Asp Val Asn Phe Asn Ser Gly Lys Ile Trp
                260                     265                     270
Ser Thr Thr Thr Ala Phe Pro Tyr Gln Leu Phe Ser Lys Thr Lys Phe
        275                     280                     285
Asn Ile His Ile Phe Ile Asp Asn Ser Thr Gln Pro Leu His Phe Met
290                     295                     300
Pro Cys Ala Asn Tyr Leu Val Lys Asp Leu Ile Ala Glu Ile Leu His
305                     310                     315                     320
Phe Cys Thr Asn Asp Gln Leu Leu Pro Lys Asp His Ile Leu Ser Val
                325                     330                     335
Trp Gly Ser Glu Glu Phe Leu Gln Asn Asp His Cys Leu Gly Ser His
                340                     345                     350
Lys Met Phe Gln Lys Asp Lys Ser Val Ile Gln Leu His Leu Gln Lys
        355                     360                     365
Ser Arg Glu Ala Pro Gly Lys Leu Ser Arg Lys His Glu Glu Asp His
        370                     375                     380
Ser Gln Phe Tyr Leu Asn Gln Leu Leu Glu Phe Met His Ile Trp Lys
385                     390                     395                     400
Val Ser Arg Gln Cys Leu Leu Thr Leu Ile Arg Lys Tyr Asp Phe His
                405                     410                     415
Leu Lys Tyr Leu Leu Lys Thr Gln Glu Asn Val Tyr Asn Ile Ile Glu
        420                     425                     430
Glu Val Lys Lys Ile Cys Ser Val Leu Gly Cys Val Glu Thr Lys Gln
        435                     440                     445
Ile Thr Asp Ala Val Asn Glu Leu Ser Leu Ile Leu Gln Arg Lys Gly
        450                     455                     460
Glu Asn Phe Tyr Gln Ser Ser Glu Thr Ser Ala Lys Gly Leu Ile Glu
465                     470                     475                     480
Lys Val Thr Thr Glu Leu Ser Thr Ser Ile Tyr Gln Leu Ile Asn Val
                485                     490                     495
Tyr Cys Asn Ser Phe Tyr Ala Asp Phe Gln Pro Val Asn Val Pro Arg
                500                     505                     510
Cys Thr Ser Tyr Leu Asn Pro Gly Leu Pro Ser His Leu Ser Phe Thr
        515                     520                     525
Val Tyr Ala Ala His Asn Ile Pro Glu Thr Trp Val His Arg Ile Asn
        530                     535                     540
```

614

Phe Pro Leu Glu Ile Lys Ser Leu Pro Arg Glu Ser Met Leu Thr Val
545   550   555   560
Lys Leu Phe Gly Ile Ala Cys Ala Thr Asn Asn Ala Asn Leu Leu Ala
                    565   570   575
Trp Thr Cys Leu Pro Leu Phe Pro Lys Glu Lys Ser Ile Leu Gly Ser
            580   585   590
Met Leu Phe Ser Met Thr Leu Gln Ser Glu Pro Pro Val Glu Met Ile
            595   600   605
Thr Pro Gly Val Trp Asp Val Ser Gln Pro Ser Pro Val Thr Leu Gln
        610   615   620
Ile Asp Phe Pro Ala Thr Gly Trp Glu Tyr Met Lys Pro Asp Ser Glu
625   630   635   640
Glu Asn Arg Ser Asn Leu Glu Glu Pro Leu Lys Glu Cys Ile Lys His
                645   650   655
Ile Ala Arg Leu Ser Gln Lys Gln Thr Pro Leu Leu Leu Ser Glu Glu
            660   665   670
Lys Lys Arg Tyr Leu Trp Phe Tyr Arg Phe Tyr Cys Asn Asn Glu Asn
            675   680   685
Cys Ser Leu Pro Leu Val Leu Gly Ser Ala Pro Gly Trp Asp Glu Arg
        690   695   700
Thr Val Ser Glu Met His Thr Ile Leu Arg Arg Trp Thr Phe Ser Gln
705   710   715   720
Pro Leu Glu Ala Leu Gly Leu Leu Thr Ser Ser Phe Pro Asp Gln Glu
                725   730   735
Ile Arg Lys Val Ala Val Gln Gln Leu Asp Asn Leu Leu Asn Asp Glu
                740   745   750
Leu Leu Glu Tyr Leu Pro Gln Leu Val Gln Ala Val Lys Phe Glu Trp
                755   760   765
Asn Leu Glu Ser Pro Leu Val Gln Leu Leu Leu His Arg Ser Leu Gln
        770   775   780
Ser Ile Gln Val Ala His Arg Leu Tyr Trp Leu Leu Lys Asn Ala Glu
785   790   795   800
Asn Glu Ala Tyr Phe Lys Ser Trp Tyr Gln Lys Leu Leu Ala Ala Leu
                805   810   815
Gln Phe Cys Ala Gly Lys Ala Leu Asn Asp Glu Phe Ser Lys Glu Gln
            820   825   830
Lys Leu Ile Lys Ile Leu Gly Asp Ile Gly Glu Arg Val Lys Ser Ala
            835   840   845
Ser Asp His Gln Arg Gln Glu Val Leu Lys Lys Glu Ile Gly Arg Leu
        850   855   860
Glu Glu Phe Phe Gln Asp Val Asn Thr Cys His Leu Pro Leu Asn Pro
865   870   875   880
Ala Leu Cys Ile Lys Gly Ile Asp His Asp Ala Cys Ser Tyr Phe Thr
                885   890   895
Ser Asn Ala Leu Pro Leu Lys Ile Thr Phe Ile Asn Ala Asn Leu Met
            900   905   910
Gly Lys Asn Ile Ser Ile Ile Phe Lys Ala Gly Asp Asp Leu Arg Gln
            915   920   925
Asp Met Leu Val Leu Gln Leu Ile Gln Val Met Asp Asn Ile Trp Leu
        930   935   940
Gln Glu Gly Leu Asp Met Gln Met Ile Ile Tyr Arg Cys Leu Ser Thr
945   950   955   960
Gly Lys Asp Gln Arg Leu Val Gln Met Val Pro Asp Ala Val Thr Leu
            965   970   975
Ala Lys Ile His Arg His Ser Gly Leu Ile Gly Pro Leu Lys Glu Asn
            980   985   990
Thr Ile Lys Lys Trp Phe Ser Gln His Asn His Leu Lys Ala Asp Tyr
        995   1000   1005
Glu Lys Ala Leu Arg Asn Phe Phe Tyr Ser Cys Ala Gly Trp Cys Val
    1010   1015   1020
Val Thr Phe Ile Leu Gly Val Cys Asp Arg His Asn Asp Asn Ile Met
1025   1030   1035   1040
Leu Thr Lys Ser Gly His Met Phe His Ile Asp Phe Gly Lys Phe Leu
                1045   1050   1055

```
Gly His Ala Gln Thr Phe Gly Gly Ile Lys Arg Asp Arg Ala Pro Phe
        1060                1065                1070
Ile Phe Thr Ser Glu Met Glu Tyr Phe Ile Thr Glu Gly Gly Lys Asn
    1075                1080                1085
Pro Gln His Phe Gln Asp Phe Val Glu Leu Cys Cys Arg Ala Tyr Asn
    1090                1095                1100
Ile Ile Arg Lys His Ser Gln Leu Leu Leu Asn Leu Leu Glu Met Met
1105                1110                1115                1120
Leu Tyr Ala Gly Leu Pro Glu Leu Ser Gly Ile Gln Asp Leu Lys Tyr
        1125                1130                1135
Val Tyr Asn Asn Leu Arg Pro Gln Asp Thr Asp Leu Glu Ala Thr Ser
        1140                1145                1150
His Phe Thr Lys Lys Ile Lys Glu Ser Leu Glu Cys Phe Pro Val Lys
        1155                1160                1165
Leu Asn Asn Leu Ile His Thr Leu Ala Gln Met Ser Ala Ile Ser Pro
        1170                1175                1180
Ala Lys Ser Thr Ser Gln Thr Phe Pro Gln Glu Ser Cys Leu Leu Ser
1185                1190                1195                1200
Thr Thr Arg Ser Ile Glu Arg Ala Thr Ile Leu Gly Phe Ser Lys Lys
        1205                1210                1215
Ser Ser Asn Leu Tyr Leu Ile Gln Val Thr His Ser Asn Asn Glu Thr
        1220                1225                1230
Ser Leu Thr Glu Lys Ser Phe Glu Gln Phe Ser Lys Leu His Ser Gln
        1235                1240                1245
Leu Gln Lys Gln Phe Ala Ser Leu Thr Leu Pro Glu Phe Pro His Trp
        1250                1255                1260
Trp His Leu Pro Phe Thr Asn Ser Asp His Arg Arg Phe Arg Asp Leu
1265                1270                1275                1280
Asn His Tyr Met Glu Gln Ile Leu Asn Val Ser His Glu Val Thr Asn
        1285                1290                1295
Ser Asp Cys Val Leu Ser Phe Phe Leu Ser Glu Ala Gly Gln Gln Thr
        1300                1305                1310
Val Glu Glu Ser Ser Pro Val Tyr Leu Gly Glu Lys Phe Pro Asp Lys
        1315                1320                1325
Lys Pro Lys Val Gln Leu Val Ile Ser Tyr Glu Asp Val Lys Leu Thr
        1330                1335                1340
Ile Leu Val Lys His Met Lys Asn Ile His Leu Pro Asp Gly Ser Ala
1345                1350                1355                1360
Pro Ser Ala His Val Glu Phe Tyr Leu Leu Pro Tyr Pro Ser Glu Val
        1365                1370                1375
Arg Arg Arg Lys Thr Lys Ser Val Pro Lys Cys Thr Asp Pro Thr Tyr
        1380                1385                1390
Asn Glu Ile Val Val Tyr Asp Glu Val Thr Glu Leu Gln Gly His Val
        1395                1400                1405
Leu Met Leu Ile Val Lys Ser Lys Thr Val Phe Val Gly Ala Ile Asn
        1410                1415                1420
Ile Arg Leu Cys Ser Val Pro Leu Asp Lys Glu Lys Trp Tyr Pro Leu
1425                1430                1435                1440
Gly Asn Ser Ile Ile Xaa Pro Leu Leu Leu Phe Tyr Thr Ser Asn Phe
        1445                1450                1455
Met Gln Ser Val Leu His
        1460    1462
```

```
<210> 1098
<211> 111
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(111)
<223> X = any amino acid or stop code
```

```
        <400> 1098
Phe Phe Leu Arg Trp Ser Leu Asp Ser Val Thr Gln Ala Gly Val Gln
1                   5                  10                  15
Ser His Asp Leu Ser Ser Leu Gln Pro Pro Pro Pro Gly Phe Lys Gln
            20                  25                  30
Ser Ser Leu Phe Gly Leu Pro Ser Ser Trp Glu Xaa Arg Trp Val Pro
        35                  40                  45
Pro Cys Pro Ala Asn Phe Phe Val Phe Leu Val Glu Thr Gly Phe Arg
    50                  55                  60
His Val Gly Gln Ala Gly Leu Glu Leu Leu Thr Ser Asn Asp Leu Pro
65                  70                  75                  80
Val Ser Ala Cys Gln Ser Ala Gly Ile Thr Gly Val Thr Thr Val Pro
                85                  90                  95
Gln Arg Lys Ser Met Ile Leu Tyr Glu Val Thr Ile Cys Tyr Pro
            100                 105             110 111


        <210> 1099
        <211> 1070
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(1070)
        <223> X = any amino acid or stop code




        <400> 1099
Phe Val Arg Glu Ile Arg Gly Pro Ala Val Pro Arg Leu Thr Ser Ala
1                   5                  10                  15
Glu Asp Arg His Arg His Gly Pro His Ala His Ser Pro Glu Leu Gln
            20                  25                  30
Arg Thr Gly Arg Asp Tyr Ser Leu Asp Tyr Leu Pro Phe Arg Leu Trp
        35                  40                  45
Val Gly Ile Trp Val Ala Thr Phe Cys Leu Val Leu Val Ala Thr Glu
    50                  55                  60
Ala Ser Val Leu Val Arg Tyr Phe Thr Arg Phe Thr Glu Glu Gly Phe
65                  70                  75                  80
Cys Ala Leu Ile Ser Leu Ile Phe Ile Tyr Asp Ala Val Gly Lys Met
                85                  90                  95
Leu Asn Leu Thr His Thr Tyr Pro Ile Gln Lys Pro Gly Ser Ser Ala
            100                 105                 110
Tyr Gly Cys Leu Cys Gln Tyr Pro Gly Pro Gly Gly Asn Glu Ser Gln
        115                 120                 125
Trp Ile Arg Thr Arg Pro Lys Asp Arg Asp Asp Ile Val Ser Met Asp
    130                 135                 140
Leu Gly Leu Ile Asn Ala Ser Leu Leu Pro Pro Pro Glu Cys Thr Arg
145                 150                 155                 160
Gln Gly Gly His Pro Arg Gly Pro Gly Cys His Thr Val Pro Asp Ile
            165                 170                 175
Ala Phe Phe Ser Leu Leu Leu Phe Leu Thr Ser Phe Phe Phe Ala Met
            180                 185                 190
Ala Leu Lys Cys Val Lys Thr Ser Arg Phe Phe Pro Ser Val Val Arg
        195                 200                 205
Lys Gly Leu Ser Asp Phe Ser Ser Val Leu Ala Ile Leu Leu Gly Cys
    210                 215                 220
```

Gly Leu Asp Ala Phe Leu Gly Leu Ala Thr Pro Lys Leu Met Val Pro
225   230   235   240
Arg Glu Phe Lys Pro Thr Leu Pro Gly Arg Gly Trp Leu Val Ser Pro
                245   250   255
Phe Gly Ala Asn Pro Trp Trp Trp Ser Val Ala Ala Ala Leu Pro Ala
                260   265   270
Leu Leu Leu Ser Ile Leu Ile Phe Met Asp Gln Gln Ile Thr Ala Val
        275   280   285
Ile Leu Asn Arg Met Glu Tyr Arg Leu Gln Lys Gly Ala Gly Phe His
    290   295   300
Leu Asp Leu Phe Trp Val Ala Val Leu Met Leu Leu Thr Ser Ala Leu
305   310   315   320
Gly Leu Pro Trp Tyr Val Ser Ala Thr Val Ile Ser Leu Ala His Met
            325   330   335
Asp Ser Leu Arg Arg Glu Ser Arg Ala Cys Ala Pro Gly Glu Arg Pro
        340   345   350
Asn Phe Leu Gly Ile Arg Glu Gln Arg Leu Thr Gly Leu Val Val Phe
        355   360   365
Ile Leu Thr Gly Ala Ser Ile Phe Leu Ala Pro Val Leu Lys Phe Ile
    370   375   380
Pro Met Pro Val Leu Tyr Gly Ile Phe Leu Tyr Met Gly Val Ala Ala
385   390   395   400
Leu Ser Ser Ile Gln Phe Thr Asn Arg Val Lys Leu Leu Leu Met Pro
            405   410   415
Ala Lys His Gln Pro Asp Leu Leu Leu Leu Arg His Val Pro Leu Thr
        420   425   430
Arg Val His Leu Phe Thr Ala Ile Ser Phe Ala Cys Leu Gly Leu Leu
    435   440   445
Trp Ile Ile Lys Ser Thr Pro Ala Ala Ile Ile Phe Pro Leu Met Leu
    450   455   460
Leu Gly Leu Val Gly Val Arg Lys Ala Leu Glu Arg Val Phe Ser Pro
465   470   475   480
Gln Glu Leu Leu Trp Leu Asp Glu Leu Met Pro Glu Glu Glu Arg Ser
            485   490   495
Ile Pro Glu Lys Gly Leu Glu Pro Glu His Ser Phe Ser Gly Ser Asp
        500   505   510
Ser Glu Asp Ser Glu Leu Met Tyr Gln Pro Lys Ala Pro Glu Ile Asn
    515   520   525
Ile Ser Val Asn Xaa Leu Glu Xaa Glu Phe Val Arg Glu Ile Arg Gly
    530   535   540
Pro Ala Val Pro Arg Leu Thr Ser Ala Glu Asp Arg His Arg His Gly
545   550   555   560
Pro His Ala His Ser Pro Glu Leu Gln Arg Thr Gly Arg Asp Tyr Ser
            565   570   575
Leu Asp Tyr Leu Pro Phe Arg Leu Trp Val Gly Ile Trp Val Ala Thr
        580   585   590
Phe Cys Leu Val Leu Val Ala Thr Glu Ala Ser Val Leu Val Arg Tyr
    595   600   605
Phe Thr Arg Phe Thr Glu Glu Gly Phe Cys Ala Leu Ile Ser Leu Ile
    610   615   620
Phe Ile Tyr Asp Ala Val Gly Lys Met Leu Asn Leu Thr His Thr Tyr
625   630   635   640
Pro Ile Gln Lys Pro Gly Ser Ser Ala Tyr Gly Cys Leu Cys Gln Tyr
            645   650   655
Pro Gly Pro Gly Gly Asn Glu Ser Gln Trp Ile Arg Thr Arg Pro Lys
            660   665   670
Asp Arg Asp Asp Ile Val Ser Met Asp Leu Gly Leu Ile Asn Ala Ser
        675   680   685
Leu Leu Pro Pro Pro Glu Cys Thr Arg Gln Gly Gly His Pro Arg Gly
        690   695   700
Pro Gly Cys His Thr Val Pro Asp Ile Ala Phe Phe Ser Leu Leu Leu
705   710   715   720
Phe Leu Thr Ser Phe Phe Phe Ala Met Ala Leu Lys Cys Val Lys Thr
            725   730   735

618

```
Ser Arg Phe Phe Pro Ser Val Val Arg Lys Gly Leu Ser Asp Phe Ser
            740             745             750
Ser Val Leu Ala Ile Leu Leu Gly Cys Gly Leu Asp Ala Phe Leu Gly
            755             760             765
Leu Ala Thr Pro Lys Leu Met Val Pro Arg Glu Phe Lys Pro Thr Leu
            770             775             780
Pro Gly Arg Gly Trp Leu Val Ser Pro Phe Gly Ala Asn Pro Trp Trp
785             790             795             800
Trp Ser Val Ala Ala Ala Leu Pro Ala Leu Leu Leu Ser Ile Leu Ile
            805             810             815
Phe Met Asp Gln Gln Ile Thr Ala Val Ile Leu Asn Arg Met Glu Tyr
            820             825             830
Arg Leu Gln Lys Gly Ala Gly Phe His Leu Asp Leu Phe Cys Val Ala
            835             840             845
Val Leu Met Leu Leu Thr Ser Ala Leu Gly Leu Pro Trp Tyr Val Ser
            850             855             860
Ala Thr Val Ile Ser Leu Ala His Met Asp Ser Leu Arg Arg Glu Ser
865             870             875             880
Arg Ala Cys Ala Pro Gly Glu Arg Pro Asn Phe Leu Gly Ile Arg Glu
            885             890             895
Gln Arg Leu Thr Gly Leu Val Val Phe Ile Leu Thr Gly Ala Ser Ile
            900             905             910
Phe Leu Ala Pro Val Leu Lys Phe Ile Pro Met Pro Val Leu Tyr Gly
            915             920             925
Ile Phe Leu Tyr Met Gly Val Ala Ala Leu Ser Ser Ile Gln Phe Thr
            930             935             940
Asn Arg Val Lys Leu Leu Leu Asp Ala Ser Lys Thr Pro Ala Arg Pro
945             950             955             960
Ala Thr Leu Ala Ala Cys Ala Ser Asp Gln Gly Pro Pro Leu His Ser
            965             970             975
His Gln Leu Cys Pro Val Trp Gly Cys Phe Gly Ile Ile Lys Ser Thr
            980             985             990
Pro Ala Ala Ile Ile Phe Pro Leu Met Leu Leu Gly Leu Val Gly Val
995             1000            1005
Arg Lys Ala Leu Glu Arg Val Phe Ser Pro Gln Glu Leu Leu Trp Leu
    1010            1015            1020
Asp Glu Leu Met Pro Glu Glu Glu Arg Ser Ile Pro Glu Lys Gly Leu
1025            1030            1035            1040
Glu Pro Glu His Ser Phe Ser Gly Ser Asp Ser Glu Asp Ser Glu Leu
            1045            1050            1055
Met Tyr Gln Pro Lys Ala Pro Glu Ile Asn Ile Ser Val Asn
            1060            1065            1070
```

```
<210> 1100
<211> 875
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(875)
<223> X = any amino acid or stop code



<400> 1100
Met Gly Leu Lys Ala Arg Arg Ala Ala Gly Ala Ala Gly Gly Gly Gly
1               5               10              15
Asp Gly Gly Gly Gly Gly Gly Ala Ala Asn Pro Ala Gly Gly Asp
            20              25              30
Ala Ala Ala Ala Gly Asp Glu Glu Arg Lys Val Gly Leu Ala Pro Gly
```

```
                    35                      40                      45
Asp Val Glu Gln Val Thr Leu Ala Leu Gly Ala Gly Ala Asp Lys Asp
        50                      55                      60
Gly Thr Leu Leu Leu Glu Gly Gly Gly Arg Asp Glu Gly Gln Arg Arg
    65                      70                      75                      80
Thr Pro Gln Gly Ile Gly Leu Leu Ala Lys Thr Pro Leu Ser Arg Pro
                    85                      90                      95
Val Lys Arg Asn Asn Ala Lys Tyr Arg Arg Ile Gln Thr Leu Ile Tyr
            100                     105                     110
Asp Ala Leu Glu Arg Pro Arg Gly Trp Ala Leu Leu Tyr His Ala Leu
            115                     120                     125
Val Phe Leu Ile Val Leu Gly Cys Leu Ile Leu Ala Val Leu Thr Thr
        130                     135                     140
Phe Lys Glu Tyr Glu Thr Val Ser Gly Asp Trp Leu Leu Leu Leu Glu
145                     150                     155                     160
Thr Phe Ala Ile Phe Ile Phe Gly Ala Glu Phe Ala Leu Arg Ile Trp
                165                     170                     175
Ala Ala Gly Cys Cys Cys Arg Tyr Lys Gly Trp Arg Gly Arg Leu Lys
            180                     185                     190
Phe Ala Arg Lys Pro Leu Cys Met Leu Asp Ile Phe Val Leu Ile Ala
        195                     200                     205
Ser Val Pro Val Val Ala Val Gly Asn Gln Gly Asn Val Leu Ala Thr
        210                     215                     220
Ser Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met Leu Arg Asp
225                     230                     235                     240
Gly Pro Gly Glu Gly Gly Thr Trp Lys Leu Leu Gly Ser Ala Ile Cys
                245                     250                     255
Ala His Ser Lys Glu Leu Ile Thr Ala Trp Tyr Ile Gly Phe Leu Thr
            260                     265                     270
Leu Ile Leu Ser Ser Phe Leu Val Tyr Leu Val Glu Lys Asp Val Pro
        275                     280                     285
Glu Val Asp Ala Gln Gly Glu Glu Met Lys Glu Glu Phe Glu Thr Tyr
    290                     295                     300
Ala Asp Ala Leu Trp Trp Gly Leu Ile Thr Leu Ala Thr Ile Gly Tyr
305                     310                     315                     320
Gly Asp Lys Thr Pro Lys Thr Trp Glu Gly Arg Leu Ile Ala Ala Thr
                325                     330                     335
Phe Ser Leu Ile Gly Val Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu
            340                     345                     350
Gly Ser Gly Leu Ala Leu Lys Val Gln Glu Gln His Arg Gln Lys His
        355                     360                     365
Phe Glu Lys Arg Arg Lys Pro Ala Ala Glu Leu Ile Gln Ala Ala Trp
    370                     375                     380
Arg Tyr Tyr Ala Thr Asn Pro Asn Arg Ile Asp Leu Val Ala Thr Trp
385                     390                     395                     400
Arg Phe Tyr Glu Ser Val Val Ser Phe Pro Phe Phe Arg Lys Glu Gln
                405                     410                     415
Leu Glu Ala Ala Ser Ser Gln Lys Leu Gly Leu Leu Asp Arg Val Arg
            420                     425                     430
Leu Ser Asn Pro Arg Gly Ser Asn Thr Lys Gly Lys Leu Phe Thr Pro
            435                     440                     445
Leu Asn Val Asp Ala Ile Glu Glu Ser Pro Ser Lys Glu Pro Lys Pro
    450                     455                     460
Val Gly Leu Asn Asn Lys Glu Arg Phe Arg Thr Ala Phe Arg Met Lys
465                     470                     475                     480
Ala Tyr Ala Phe Trp Gln Ser Ser Glu Asp Ala Gly Thr Gly Asp Pro
                485                     490                     495
Met Ala Glu Asp Arg Gly Tyr Gly Asn Asp Phe Pro Ile Glu Asp Met
            500                     505                     510
Ile Pro Thr Leu Lys Ala Ala Ile Arg Ala Val Arg Ile Leu Gln Phe
        515                     520                     525
Arg Leu Tyr Lys Lys Lys Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val
        530                     535                     540
Lys Asp Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Ser
```

620

```
545                   550                   555                   560
Arg Ile Lys Tyr Leu Gln Thr Arg Ile Asp Met Ile Phe Thr Pro Gly
                  565                   570                   575
Pro Pro Ser Thr Pro Lys His Lys Lys Ser Gln Lys Gly Ser Ala Phe
              580                   585                   590
Thr Phe Pro Ser Gln Gln Ser Pro Arg Asn Glu Pro Tyr Val Ala Arg
          595                   600                   605
Pro Ser Thr Ser Glu Ile Glu Asp Gln Arg His Xaa Trp Gly Lys Phe
    610                   615                   620
Val Lys Ser Leu Lys Gly Gln Val Gln Gly Leu Gly Arg Lys Leu Asp
625                   630                   635                   640
Phe Leu Val Asp Met His Met Gln His Met Glu Arg Leu Gln Val Gln
                  645                   650                   655
Val Thr Glu Tyr Tyr Pro Thr Lys Gly Thr Ser Ser Pro Ala Glu Ala
              660                   665                   670
Glu Lys Lys Glu Asp Asn Arg Tyr Ser Asp Leu Lys Thr Ile Ile Cys
          675                   680                   685
Asn Tyr Ser Glu Thr Gly Pro Pro Glu Pro Pro Tyr Ser Phe His Gln
          690                   695                   700
Val Thr Ile Asp Lys Val Ser Pro Tyr Gly Phe Phe Ala His Asp Pro
705                   710                   715                   720
Val Asn Leu Pro Arg Gly Gly Pro Ser Ser Gly Lys Val Gln Ala Thr
              725                   730                   735
Pro Pro Ser Ser Ala Thr Thr Tyr Val Glu Arg Pro Thr Val Leu Pro
              740                   745                   750
Ile Leu Thr Leu Leu Asp Ser Arg Val Ser Cys His Ser Gln Ala Asp
          755                   760                   765
Leu Gln Gly Pro Tyr Ser Asp Arg Ile Ser Pro Arg Gln Arg Arg Ser
    770                   775                   780
Ile Thr Arg Asp Ser Asp Thr Pro Leu Ser Leu Met Ser Val Asn His
785                   790                   795                   800
Glu Glu Leu Glu Arg Ser Pro Ser Gly Phe Ser Ile Ser Gln Asp Arg
              805                   810                   815
Asp Asp Tyr Val Phe Gly Pro Asn Gly Gly Ser Ser Trp Met Arg Glu
          820                   825                   830
Lys Arg Tyr Leu Ala Glu Gly Glu Thr Asp Thr Asp Thr Asp Pro Phe
          835                   840                   845
Thr Pro Ser Gly Ser Met Pro Leu Ser Ser Thr Gly Asp Gly Ile Ser
850                   855                   860
Asp Ser Val Trp Thr Pro Ser Asn Lys Pro Ile
865                   870                   875
```

```
<210> 1101
<211> 3530
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(3530)
<223> X = any amino acid or stop code
```

⌡

```
<400> 1101
Arg Thr Arg Gly Ile Ile Glu Phe Asp Pro Lys Tyr Thr Ala Phe Glu
1                   5                   10                   15
Val Glu Glu Asp Val Gly Leu Ile Met Ile Pro Val Val Arg Leu His
              20                   25                   30
Gly Thr Tyr Gly Tyr Val Thr Ala Asp Phe Ile Ser Gln Ser Ser Ser
          35                   40                   45
```

621

```
Ala Ser Pro Gly Gly Val Asp Tyr Ile Leu His Gly Ser Thr Val Thr
    50                  55              60
Phe Gln His Gly Gln Asn Leu Ser Phe Ile Asn Ile Ser Ile Ile Asp
65              70              75                  80
Asp Asn Glu Ser Glu Phe Glu Glu Pro Ile Glu Ile Leu Leu Thr Gly
            85              90                  95
Ala Thr Gly Gly Ala Val Leu Gly Arg His Leu Val Ser Arg Ile Ile
        100             105             110
Ile Ala Lys Ser Asp Ser Pro Phe Gly Val Ile Arg Phe Leu Asn Gln
    115             120             125
Ser Lys Ile Ser Ile Ala Asn Pro Asn Ser Thr Met Ile Leu Ser Leu
    130             135             140
Val Leu Glu Arg Thr Gly Gly Leu Leu Gly Glu Ile Gln Val Asn Trp
145             150             155             160
Glu Thr Val Gly Pro Asn Ser Gln Glu Ala Leu Leu Pro Gln Asn Arg
            165             170             175
Asp Ile Ala Asp Pro Val Ser Gly Leu Phe Tyr Phe Gly Glu Gly Glu
        180             185             190
Gly Gly Val Arg Thr Ile Ile Leu Thr Ile Tyr Pro His Glu Glu Ile
        195             200             205
Glu Val Glu Glu Thr Phe Ile Ile Lys Leu His Leu Val Lys Gly Glu
    210             215             220
Ala Lys Leu Asp Ser Arg Ala Lys Asp Val Thr Leu Thr Ile Gln Glu
225             230             235             240
Phe Gly Asp Pro Asn Gly Val Val Gln Phe Ala Pro Glu Thr Leu Ser
            245             250             255
Lys Lys Thr Tyr Ser Glu Pro Leu Ala Leu Glu Gly Pro Leu Leu Ile
            260             265             270
Thr Phe Phe Val Arg Arg Val Lys Gly Thr Phe Gly Glu Ile Met Val
            275             280             285
Tyr Trp Glu Leu Ser Ser Glu Phe Asp Ile Thr Glu Asp Phe Leu Ser
    290             295             300
Thr Ser Gly Phe Phe Thr Ile Ala Asp Gly Glu Ser Glu Ala Ser Phe
305             310             315             320
Asp Val His Leu Leu Pro Asp Glu Val Pro Glu Ile Glu Glu Asp Tyr
            325             330             335
Val Ile Gln Leu Val Ser Val Glu Gly Gly Ala Glu Leu Asp Leu Glu
            340             345             350
Lys Ser Ile Thr Trp Phe Ser Val Tyr Ala Asn Asp Asp Pro His Gly
    355             360             365
Val Phe Ala Leu Tyr Ser Asp Arg Gln Ser Ile Leu Ile Gly Gln Asn
370             375             380
Leu Ile Arg Ser Ile Gln Ile Asn Ile Thr Arg Leu Ala Gly Thr Phe
385             390             395             400
Gly Asp Val Ala Val Gly Leu Arg Ile Ser Ser Asp His Lys Glu Gln
        405             410             415
Pro Ile Val Thr Glu Asn Ala Glu Arg Gln Leu Val Val Lys Asp Gly
        420             425             430
Ala Thr Tyr Lys Val Asp Val Val Pro Ile Lys Asn Gln Val Phe Leu
        435             440             445
Ser Leu Gly Ser Asn Phe Thr Leu Gln Leu Val Thr Val Met Leu Val
    450             455             460
Gly Gly Arg Phe Tyr Gly Met Pro Thr Ile Leu Gln Glu Ala Lys Ser
465             470             475             480
Ala Val Leu Pro Val Ser Glu Lys Ala Ala Asn Ser Gln Val Gly Phe
            485             490             495
Glu Ser Thr Ala Phe Gln Leu Met Asn Ile Thr Ala Gly Thr Ser His
            500             505             510
Val Met Ile Ser Arg Arg Gly Thr Tyr Gly Ala Leu Ser Val Ala Trp
    515             520             525
Thr Thr Gly Tyr Ala Pro Gly Leu Glu Ile Pro Glu Phe Ile Val Val
    530             535             540
Gly Asn Met Thr Pro Thr Leu Gly Ser Leu Ser Phe Ser His Gly Glu
545             550             555             560
```

```
Gln Arg Lys Gly Val Phe Leu Trp Thr Phe Pro Ser Pro Gly Trp Pro
            565             570             575
Glu Ala Phe Val Leu His Leu Ser Gly Val Gln Ser Ser Ala Pro Gly
            580             585             590
Gly Ala Gln Leu Arg Ser Gly Phe Ile Val Ala Glu Ile Glu Pro Met
        595             600             605
Gly Val Phe Gln Phe Ser Thr Ser Ser Arg Asn Ile Ile Val Ser Glu
    610             615             620
Asp Thr Gln Met Ile Arg Leu His Val Gln Arg Leu Phe Gly Phe His
625             630             635             640
Ser Asp Leu Ile Lys Val Ser Tyr Gln Thr Thr Ala Gly Ser Ala Lys
            645             650             655
Pro Leu Glu Asp Phe Glu Pro Val Gln Asn Gly Glu Leu Phe Phe Gln
            660             665             670
Lys Phe Gln Thr Glu Val Asp Phe Glu Ile Thr Ile Ile Asn Asp Gln
        675             680             685
Leu Ser Glu Ile Glu Glu Phe Phe Tyr Ile Asn Leu Thr Ser Val Glu
    690             695             700
Ile Arg Gly Leu Gln Lys Phe Asp Val Asn Trp Ser Pro Arg Leu Asn
705             710             715             720
Leu Asp Phe Ser Val Ala Val Ile Thr Ile Leu Asp Asn Asp Asp Leu
            725             730             735
Ala Gly Met Asp Ile Ser Phe Pro Glu Thr Thr Val Ala Val Ala Val
            740             745             750
Asp Thr Thr Leu Ile Pro Val Glu Thr Glu Ser Thr Thr Tyr Leu Ser
        755             760             765
Thr Ser Lys Thr Thr Thr Ile Leu Gln Pro Thr Asn Val Val Ala Ile
    770             775             780
Val Thr Glu Ala Thr Gly Val Ser Ala Ile Pro Glu Lys Leu Val Thr
785             790             795             800
Leu His Gly Thr Pro Ala Val Ser Glu Lys Pro Asp Val Ala Thr Val
            805             810             815
Thr Ala Asn Val Ser Ile His Gly Thr Phe Ser Leu Gly Pro Ser Ile
            820             825             830
Val Tyr Ile Glu Glu Glu Met Lys Asn Gly Thr Phe Asn Thr Ala Glu
    835             840             845
Val Leu Ile Arg Arg Thr Gly Gly Phe Thr Gly Asn Val Ser Ile Thr
    850             855             860
Val Lys Thr Phe Gly Glu Arg Cys Ala Gln Met Glu Pro Asn Ala Leu
865             870             875             880
Pro Phe Arg Gly Ile Tyr Gly Ile Ser Asn Leu Thr Trp Ala Val Glu
            885             890             895
Glu Glu Asp Phe Glu Glu Gln Thr Leu Thr Leu Ile Phe Leu Asp Gly
        900             905             910
Glu Arg Glu Arg Lys Val Ser Val Gln Ile Leu Asp Asp Asp Glu Pro
    915             920             925
Glu Gly Gln Glu Phe Phe Tyr Val Phe Leu Thr Asn Pro Gln Gly Gly
    930             935             940
Ala Gln Ile Val Glu Gly Lys Asp Asp Thr Gly Phe Ala Ala Phe Ala
945             950             955             960
Met Val Ile Ile Thr Gly Ser Asp Leu His Asn Gly Ile Ile Gly Phe
            965             970             975
Ser Glu Glu Ser Gln Ser Gly Leu Glu Leu Arg Glu Gly Ala Val Met
            980             985             990
Arg Arg Leu His Leu Ile Val Thr Arg Gln Pro Asn Arg Ala Phe Glu
        995             1000            1005
Asp Val Lys Val Phe Trp Arg Val Thr Leu Asn Lys Thr Val Val Val
    1010            1015            1020
Leu Gln Lys Asp Gly Val Asn Leu Met Glu Glu Leu Gln Ser Val Ser
1025            1030            1035            1040
Gly Thr Thr Thr Cys Thr Met Gly Gln Thr Lys Cys Phe Ile Ser Ile
            1045            1050            1055
Glu Leu Lys Pro Glu Lys Val Pro Gln Val Glu Val Tyr Phe Phe Val
            1060            1065            1070
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623

Glu Leu Tyr Glu Ala Thr Ala Gly Ala Ala Ile Asn Asn Ser Ala Arg
    1075   1080   1085
Phe Ala Gln Ile Lys Ile Leu Glu Ser Asp Glu Ser Gln Ser Leu Val
    1090   1095   1100
Tyr Phe Ser Val Gly Ser Arg Leu Ala Val Ala His Lys Lys Ala Thr
1105   1110   1115   1120
Leu Ile Ser Leu Gln Val Ala Arg Asp Ser Gly Thr Gly Leu Met Met
                1125   1130   1135
Ser Val Asn Phe Ser Thr Gln Glu Leu Arg Ser Ala Glu Thr Ile Gly
            1140   1145   1150
Arg Thr Ile Ile Ser Pro Ala Ile Ser Gly Lys Asp Phe Val Ile Thr
            1155   1160   1165
Glu Gly Thr Leu Val Phe Glu Pro Gly Gln Arg Ser Thr Val Leu Asp
    1170   1175   1180
Val Ile Leu Thr Pro Glu Thr Gly Ser Leu Asn Ser Phe Pro Lys Arg
1185   1190   1195   1200
Phe Gln Ile Val Leu Phe Asp Pro Lys Gly Gly Ala Arg Ile Asp Lys
            1205   1210   1215
Val Tyr Gly Thr Ala Asn Ile Thr Leu Val Ser Asp Ala Asp Ser Gln
            1220   1225   1230
Ala Ile Trp Gly Leu Ala Asp Gln Leu His Gln Pro Val Asn Asp Asp
        1235   1240   1245
Ile Leu Asn Arg Val Leu His Thr Ile Ser Met Lys Val Ala Thr Glu
    1250   1255   1260
Asn Thr Asp Glu Gln Leu Ser Ala Met Met His Leu Ile Glu Lys Ile
1265   1270   1275   1280
Thr Thr Glu Gly Lys Ile Gln Ala Phe Ser Val Ala Ser Arg Thr Leu
                1285   1290   1295
Phe Tyr Glu Ile Leu Cys Ser Leu Ile Asn Pro Lys Arg Lys Asp Thr
        1300   1305   1310
Arg Gly Phe Ser His Phe Ala Glu Leu Thr Glu Asn Phe Ala Phe Ser
    1315   1320   1325
Leu Leu Thr Asn Val Thr Cys Gly Ser Pro Gly Glu Lys Ser Lys Thr
    1330   1335   1340
Ile Leu Asp Ser Cys Pro Tyr Leu Ser Ile Leu Ala Leu His Trp Tyr
1345   1350   1355   1360
Pro Gln Gln Ile Asn Gly His Lys Phe Glu Gly Lys Glu Gly Asp Tyr
            1365   1370   1375
Ile Arg Ile Pro Glu Arg Leu Leu Asp Val Gln Asp Ala Glu Ile Met
        1380   1385   1390
Ala Gly Lys Ser Thr Cys Lys Leu Val Gln Phe Thr Glu Tyr Ser Ser
        1395   1400   1405
Gln Gln Trp Phe Ile Ser Gly Asn Asn Leu Pro Thr Leu Lys Asn Lys
    1410   1415   1420
Val Leu Ser Leu Ser Val Lys Gly Gln Ser Ser Gln Leu Leu Thr Asn
1425   1430   1435   1440
Asp Asn Glu Val Leu Tyr Arg Ile Tyr Ala Ala Glu Pro Arg Ile Ile
            1445   1450   1455
Pro Gln Thr Ser Leu Cys Leu Leu Trp Asn Gln Ala Ala Ala Ser Trp
        1460   1465   1470
Leu Ser Asp Ser Gln Phe Cys Lys Val Ile Glu Glu Thr Ala Asp Tyr
    1475   1480   1485
Val Glu Cys Ala Cys Leu His Met Ser Val Tyr Ala Val Tyr Ala Arg
    1490   1495   1500
Thr Asp Asn Leu Ser Ser Tyr Asn Glu Ala Phe Phe Thr Ser Gly Phe
1505   1510   1515   1520
Ile Cys Ile Ser Gly Leu Cys Leu Ala Val Leu Ser His Ile Phe Cys
            1525   1530   1535
Ala Arg Tyr Ser Met Phe Ala Ala Lys Leu Leu Thr His Met Met Ala
        1540   1545   1550
Ala Ser Leu Gly Thr Gln Ile Leu Phe Leu Ala Ser Ala Tyr Ala Ser
    1555   1560   1565
Pro Gln Leu Ala Glu Glu Ser Cys Ser Ala Met Ala Ala Val Thr His
    1570   1575   1580

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Tyr Leu Tyr Leu Cys Gln Phe Ser Trp Met Leu Ile Gln Ser Val Asn
1585   1590   1595   1600
Phe Trp Tyr Val Leu Val Met Asn Asp Glu His Thr Glu Arg Arg Tyr
                1605   1610   1615
Leu Leu Phe Phe Leu Leu Ser Trp Gly Leu Pro Ala Phe Val Val Ile
                1620   1625   1630
Leu Leu Ile Val Ile Leu Lys Gly Ile Tyr His Gln Ser Met Ser Gln
        1635   1640   1645
Ile Tyr Gly Leu Ile His Gly Asp Leu Cys Phe Ile Pro Asn Val Tyr
        1650   1655   1660
Ala Ala Leu Phe Thr Ala Ala Leu Val Pro Leu Thr Cys Leu Val Val
1665   1670   1675   1680
Val Phe Val Val Phe Ile His Ala Tyr Gln Val Lys Pro Gln Trp Lys
                1685   1690   1695
Ala Tyr Asp Asp Val Phe Arg Gly Arg Thr Asn Ala Ala Glu Ile Pro
            1700   1705   1710
Leu Ile Leu Tyr Leu Phe Ala Leu Ile Ser Val Thr Trp Leu Trp Gly
        1715   1720   1725
Gly Leu His Met Ala Tyr Arg His Phe Trp Met Leu Val Leu Phe Val
        1730   1735   1740
Ile Phe Asn Ser Leu Gln Leu Leu Tyr Pro Leu Phe Tyr Phe Leu Leu
1745   1750   1755   1760
Leu Xaa Asp Gln Ser Ser Ser Ala Ser Pro Gly Gly Val Asp Tyr Ile
            1765   1770   1775
Leu His Gly Ser Thr Val Thr Phe Gln His Gly Gln Asn Leu Ser Phe
            1780   1785   1790
Ile Asn Ile Ser Ile Ile Asp Asp Asn Glu Ser Glu Phe Glu Glu Pro
        1795   1800   1805
Ile Glu Ile Leu Leu Thr Gly Ala Thr Gly Gly Ala Val Leu Gly Arg
        1810   1815   1820
His Leu Val Ser Arg Ile Ile Ile Ala Lys Ser Asp Ser Pro Phe Gly
1825   1830   1835   1840
Val Ile Arg Phe Leu Asn Gln Ser Lys Ile Ser Ile Ala Asn Pro Asn
            1845   1850   1855
Ser Thr Met Ile Leu Ser Leu Val Leu Glu Arg Thr Gly Gly Leu Leu
        1860   1865   1870
Gly Glu Ile Gln Val Asn Trp Glu Thr Val Gly Pro Asn Ser Gln Glu
        1875   1880   1885
Ala Leu Leu Pro Gln Asn Arg Asp Ile Ala Asp Pro Val Ser Gly Leu
        1890   1895   1900
Phe Tyr Phe Gly Glu Gly Glu Gly Gly Val Arg Thr Ile Ile Leu Thr
1905   1910   1915   1920
Ile Tyr Pro His Glu Glu Ile Glu Val Glu Glu Thr Phe Ile Ile Lys
            1925   1930   1935
Leu His Leu Val Lys Gly Glu Ala Lys Leu Asp Ser Arg Ala Lys Asp
        1940   1945   1950
Val Thr Leu Thr Ile Gln Glu Phe Gly Asp Pro Asn Gly Val Val Gln
        1955   1960   1965
Phe Ala Pro Glu Thr Leu Ser Lys Lys Thr Tyr Ser Glu Pro Leu Ala
        1970   1975   1980
Leu Glu Gly Pro Leu Leu Ile Thr Phe Phe Val Arg Arg Val Lys Gly
1985   1990   1995   2000
Thr Phe Gly Glu Ile Met Val Tyr Trp Glu Leu Ser Ser Glu Phe Asp
            2005   2010   2015
Ile Thr Glu Asp Phe Leu Ser Thr Ser Gly Phe Phe Thr Ile Ala Asp
            2020   2025   2030
Gly Glu Ser Glu Ala Ser Phe Asp Val His Leu Leu Pro Asp Glu Val
        2035   2040   2045
Pro Glu Ile Glu Glu Asp Tyr Val Ile Gln Leu Val Ser Val Glu Gly
        2050   2055   2060
Gly Ala Glu Leu Asp Leu Glu Lys Ser Ile Thr Trp Phe Ser Val Tyr
2065   2070   2075   2080
Ala Asn Asp Asp Pro His Gly Val Phe Ala Leu Tyr Ser Asp Arg Gln
            2085   2090   2095

625

Ser Ile Leu Ile Gly Gln Asn Leu Ile Arg Ser Ile Gln Ile Asn Ile
          2100   2105   2110
Thr Arg Leu Ala Gly Thr Phe Gly Asp Val Ala Val Gly Leu Arg Ile
          2115   2120   2125
Ser Ser Asp His Lys Glu Gln Pro Ile Val Thr Glu Asn Ala Glu Arg
     2130   2135   2140
Gln Leu Val Val Lys Asp Gly Ala Thr Tyr Lys Val Asp Val Val Pro
2145   2150   2155   2160
Ile Lys Asn Gln Val Phe Leu Ser Leu Gly Ser Asn Phe Thr Leu Gln
          2165   2170   2175
Leu Val Thr Val Met Leu Val Gly Gly Arg Phe Tyr Gly Met Pro Thr
          2180   2185   2190
Ile Leu Gln Glu Ala Lys Ser Ala Val Leu Pro Val Ser Glu Lys Ala
          2195   2200   2205
Ala Asn Ser Gln Val Gly Phe Glu Ser Thr Ala Phe Gln Leu Met Asn
     2210   2215   2220
Ile Thr Ala Gly Thr Ser His Val Met Ile Ser Arg Arg Gly Thr Tyr
2225   2230   2235   2240
Gly Ala Leu Ser Val Ala Trp Thr Thr Gly Tyr Ala Pro Gly Leu Glu
          2245   2250   2255
Ile Pro Glu Phe Ile Val Val Gly Asn Met Thr Pro Thr Leu Gly Ser
          2260   2265   2270
Leu Ser Phe Ser His Gly Glu Gln Arg Lys Gly Val Phe Leu Trp Thr
          2275   2280   2285
Phe Pro Ser Pro Gly Trp Pro Glu Ala Phe Val Leu His Leu Ser Gly
     2290   2295   2300
Val Gln Ser Ser Ala Pro Gly Gly Ala Gln Leu Arg Ser Gly Phe Ile
2305   2310   2315   2320
Val Ala Glu Ile Glu Pro Met Gly Val Phe Gln Phe Ser Thr Ser Ser
          2325   2330   2335
Arg Asn Ile Ile Val Ser Glu Asp Thr Gln Met Ile Arg Leu His Val
          2340   2345   2350
Gln Arg Leu Phe Gly Phe His Ser Asp Leu Ile Lys Val Ser Tyr Gln
     2355   2360   2365
Thr Thr Ala Gly Ser Ala Lys Pro Leu Glu Asp Phe Glu Pro Val Gln
     2370   2375   2380
Asn Gly Glu Leu Phe Phe Gln Lys Phe Gln Thr Glu Val Asp Phe Glu
2385   2390   2395   2400
Ile Thr Ile Ile Asn Asp Gln Leu Ser Glu Ile Glu Glu Phe Phe Tyr
          2405   2410   2415
Ile Asn Leu Thr Ser Val Glu Ile Arg Gly Leu Gln Lys Phe Asp Val
          2420   2425   2430
Asn Trp Ser Pro Arg Leu Asn Leu Asp Phe Ser Val Ala Val Ile Thr
          2435   2440   2445
Ile Leu Asp Asn Asp Asp Leu Ala Gly Met Asp Ile Ser Phe Pro Glu
     2450   2455   2460
Thr Thr Val Ala Val Ala Val Asp Thr Thr Leu Ile Pro Val Glu Thr
2465   2470   2475   2480
Glu Ser Thr Thr Tyr Leu Ser Thr Ser Lys Thr Thr Thr Ile Leu Gln
          2485   2490   2495
Pro Thr Asn Val Val Ala Ile Val Thr Glu Ala Thr Gly Val Ser Ala
          2500   2505   2510
Ile Pro Glu Lys Leu Val Thr Leu His Gly Thr Pro Ala Val Ser Glu
          2515   2520   2525
Lys Pro Asp Val Ala Thr Val Thr Ala Asn Val Ser Ile His Gly Thr
     2530   2535   2540
Phe Ser Leu Gly Pro Ser Ile Val Tyr Ile Glu Glu Glu Met Lys Asn
2545   2550   2555   2560
Gly Thr Phe Asn Thr Ala Glu Val Leu Ile Arg Arg Thr Gly Gly Phe
          2565   2570   2575
Thr Gly Asn Val Ser Ile Thr Val Lys Thr Phe Gly Glu Arg Cys Ala
          2580   2585   2590
Gln Met Glu Pro Asn Ala Leu Pro Phe Arg Gly Ile Tyr Gly Ile Ser
     2595   2600   2605

Asn Leu Thr Trp Ala Val Glu Glu Glu Asp Phe Glu Glu Gln Thr Leu
   2610   2615   2620
Thr Leu Ile Phe Leu Asp Gly Glu Arg Glu Arg Lys Val Ser Val Gln
2625   2630   2635   2640
Ile Leu Asp Asp Asp Glu Pro Glu Gly Gln Glu Phe Phe Tyr Val Phe
            2645   2650   2655
Leu Thr Asn Pro Gln Gly Gly Ala Gln Ile Val Glu Gly Lys Asp Asp
            2660   2665   2670
Thr Gly Phe Ala Ala Phe Ala Met Val Ile Ile Thr Gly Ser Asp Leu
       2675   2680   2685
His Asn Gly Ile Ile Gly Phe Ser Glu Glu Ser Gln Ser Gly Leu Glu
   2690   2695   2700
Leu Arg Glu Gly Ala Val Met Arg Arg Leu His Leu Ile Val Thr Arg
2705   2710   2715   2720
Gln Pro Asn Arg Ala Phe Glu Asp Val Lys Val Phe Trp Arg Val Thr
            2725   2730   2735
Leu Asn Lys Thr Val Val Val Leu Gln Lys Asp Gly Val Asn Leu Met
            2740   2745   2750
Glu Glu Leu Gln Ser Val Ser Gly Thr Thr Thr Cys Thr Met Gly Gln
       2755   2760   2765
Thr Lys Cys Phe Ile Ser Ile Glu Leu Lys Pro Glu Lys Val Pro Gln
   2770   2775   2780
Val Glu Val Tyr Phe Phe Val Glu Leu Tyr Glu Ala Thr Ala Gly Ala
2785   2790   2795   2800
Ala Ile Asn Asn Ser Ala Arg Phe Ala Gln Ile Lys Ile Leu Glu Ser
            2805   2810   2815
Asp Glu Ser Gln Ser Leu Val Tyr Phe Ser Val Gly Ser Arg Leu Ala
            2820   2825   2830
Val Ala His Lys Lys Ala Thr Leu Ile Ser Leu Gln Val Ala Arg Asp
2835   2840   2845
Ser Gly Thr Gly Leu Met Met Ser Val Asn Phe Ser Thr Gln Glu Leu
   2850   2855   2860
Arg Ser Ala Glu Thr Ile Gly Arg Thr Ile Ile Ser Pro Ala Ile Ser
2865   2870   2875   2880
Gly Lys Asp Phe Val Ile Thr Glu Gly Thr Leu Val Phe Glu Pro Gly
            2885   2890   2895
Gln Arg Ser Thr Val Leu Asp Val Ile Leu Thr Pro Glu Thr Gly Ser
            2900   2905   2910
Leu Asn Ser Phe Pro Lys Arg Phe Gln Ile Val Leu Phe Asp Pro Lys
   2915   2920   2925
Gly Gly Ala Arg Ile Asp Lys Val Tyr Gly Thr Ala Asn Ile Thr Leu
   2930   2935   2940
Val Ser Asp Ala Asp Ser Gln Ala Ile Trp Gly Leu Ala Asp Gln Leu
2945   2950   2955   2960
His Gln Pro Val Asn Asp Asp Ile Leu Asn Arg Val Leu His Thr Ile
            2965   2970   2975
Ser Met Lys Val Ala Thr Glu Asn Thr Asp Glu Gln Leu Ser Ala Met
            2980   2985   2990
Met His Leu Ile Glu Lys Ile Thr Thr Glu Gly Lys Ile Gln Ala Phe
       2995   3000   3005
Ser Val Ala Ser Arg Thr Leu Phe Tyr Glu Ile Leu Cys Ser Leu Ile
   3010   3015   3020
Asn Pro Lys Arg Lys Asp Thr Arg Gly Phe Ser His Phe Ala Glu Leu
3025   3030   3035   3040
Thr Glu Asn Phe Ala Phe Ser Leu Leu Thr Asn Val Thr Cys Gly Ser
            3045   3050   3055
Pro Gly Glu Lys Ser Lys Thr Ile Leu Asp Ser Cys Pro Tyr Leu Ser
            3060   3065   3070
Ile Leu Ala Leu His Trp Tyr Pro Gln Gln Ile Asn Gly His Lys Phe
       3075   3080   3085
Glu Gly Lys Glu Gly Asp Tyr Ile Arg Ile Pro Glu Arg Leu Leu Asp
   3090   3095   3100
Val Gln Asp Ala Glu Ile Met Ala Gly Lys Ser Thr Cys Lys Leu Val
3105   3110   3115   3120

Gln Phe Thr Glu Tyr Ser Ser Gln Gln Trp Phe Ile Ser Gly Asn Asn
              3125   3130   3135
Leu Pro Thr Leu Lys Asn Lys Val Leu Ser Leu Ser Val Lys Gly Gln
              3140   3145   3150
Ser Ser Gln Leu Leu Thr Asn Asp Asn Glu Val Leu Tyr Arg Ile Tyr
              3155   3160   3165
Ala Ala Glu Pro Arg Ile Ile Pro Gln Thr Ser Leu Cys Leu Leu Trp
3170   3175   3180
Asn Gln Ala Ala Ala Ser Trp Leu Ser Asp Ser Gln Phe Cys Lys Val
3185   3190   3195   3200
Ile Glu Glu Thr Ala Asp Tyr Val Glu Cys Ala Cys Leu His Met Ser
              3205   3210   3215
Val Tyr Ala Val Tyr Ala Arg Thr Asp Asn Leu Ser Ser Tyr Asn Glu
              3220   3225   3230
Ala Phe Phe Thr Ser Gly Phe Ile Cys Ile Ser Gly Leu Cys Leu Ala
              3235   3240   3245
Val Leu Ser His Ile Phe Cys Ala Arg Tyr Ser Met Phe Ala Ala Lys
3250   3255   3260
Leu Leu Thr His Met Met Ala Ala Ser Leu Gly Thr Gln Ile Leu Phe
3265   3270   3275   3280
Leu Ala Ser Ala Tyr Ala Ser Pro Gln Leu Ala Glu Glu Ser Cys Ser
              3285   3290   3295
Ala Met Ala Ala Val Thr His Tyr Leu Tyr Leu Cys Gln Phe Ser Trp
              3300   3305   3310
Met Leu Ile Gln Ser Val Asn Phe Trp Tyr Val Leu Val Met Asn Asp
              3315   3320   3325
Glu His Thr Glu Arg Arg Tyr Leu Leu Phe Phe Leu Leu Ser Trp Gly
3330   3335   3340
Leu Pro Ala Phe Val Val Ile Leu Leu Ile Val Ile Leu Lys Gly Ile
3345   3350   3355   3360
Tyr His Gln Ser Met Ser Gln Ile Tyr Gly Leu Ile His Gly Asp Leu
              3365   3370   3375
Cys Phe Ile Pro Asn Val Tyr Ala Ala Leu Phe Thr Ala Ala Leu Val
              3380   3385   3390
Pro Leu Thr Cys Leu Val Val Val Phe Val Val Phe Ile His Ala Tyr
              3395   3400   3405
Gln Val Lys Pro Gln Trp Lys Ala Tyr Asp Asp Val Phe Arg Gly Arg
              3410   3415   3420
Thr Asn Ala Ala Glu Ile Pro Leu Ile Leu Tyr Leu Phe Ala Leu Ile
3425   3430   3435   3440
Ser Val Thr Trp Leu Trp Gly Gly Leu His Met Ala Tyr Arg His Phe
              3445   3450   3455
Trp Met Leu Val Leu Phe Val Ile Phe Asn Ser Leu Gln Leu Leu Val
              3460   3465   3470
Pro Ser Val Leu Leu Phe Thr Ser Met Arg Ser Thr Phe Phe Ser Phe
              3475   3480   3485
His Thr Gly Thr Leu Thr Ser Arg Glu Lys Lys Ser Thr Phe Val Leu
              3490   3495   3500
Thr Cys Leu Leu Ser Pro Asp Ser Lys Gly Leu Gly Val Leu Cys Phe
3505   3510   3515   3520
Leu Asn Thr Glu Trp Ala Phe Gln Val His
              3525   3530

     <210> 1102
     <211> 945
     <212> Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(945)
     <223> X = any amino acid or stop code

<400> 1102
Ala Ala Gly Ala Thr Met Glu Arg Asp Gly Cys Ala Gly Gly Gly Ser
1   5   10   15
Arg Gly Gly Glu Gly Gly Arg Ala Pro Arg Glu Gly Pro Ala Gly Asn
                20   25   30
Gly Arg Asp Arg Gly Arg Ser His Ala Ala Glu Ala Pro Gly Asp Pro
            35   40   45
Gln Ala Ala Ala Ser Leu Leu Ala Pro Met Asp Val Gly Glu Glu Pro
        50   55   60
Leu Glu Lys Ala Ala Arg Ala Arg Thr Ala Lys Asp Pro Asn Thr Tyr
65   70   75   80
Lys Val Leu Ser Leu Val Leu Ser Val Cys Val Leu Thr Thr Ile Leu
                85   90   95
Gly Cys Ile Phe Gly Leu Lys Pro Ser Cys Ala Lys Glu Val Lys Ser
            100   105   110
Cys Lys Gly Arg Cys Phe Glu Arg Thr Phe Gly Asn Cys Arg Cys Asp
        115   120   125
Ala Ala Cys Val Glu Leu Gly Asn Cys Cys Leu Gly Leu Pro Gly Gly
        130   135   140
Thr Cys Ile Glu Pro Glu His Ile Trp Thr Cys Asn Lys Phe Arg Cys
145   150   155   160
Gly Glu Lys Arg Leu Thr Arg Ser Leu Cys Ala Cys Ser Asp Asp Cys
                165   170   175
Lys Asp Arg Gly Asp Cys Leu Pro Ser Asn Leu Gln Phe Leu Cys Val
            180   185   190
Gln Gly Glu Lys Ser Trp Gly Arg Lys Asn Pro Cys Glu Ser His Leu
            195   200   205
Met Glu Pro Gln Cys Pro Ala Gly Phe Glu Thr Pro Ser Leu Pro Leu
210   215   220
Leu Ile Phe Ser Leu Asp Gly Phe Arg Ala Glu Tyr Leu His Thr Trp
225   230   235   240
Gly Gly Leu Leu Pro Val Ile Ser Lys Leu Lys Lys Cys Gly Thr Tyr
                245   250   255
Thr Lys Asn Met Arg Pro Val Tyr Pro Thr Lys Thr Phe Pro Asn His
            260   265   270
Tyr Ser Ile Val Thr Gly Leu Tyr Pro Glu Ser His Gly Ile Ile Asn
            275   280   285
Asn Lys Met Tyr Asp Pro Lys Met Asn Ala Ser Phe Ser Leu Lys Ser
        290   295   300
Lys Glu Lys Phe Asn Pro Glu Trp Tyr Lys Gly Glu Pro Ile Trp Val
305   310   315   320
Thr Ala Lys Tyr Gln Gly Leu Lys Ser Gly Thr Phe Phe Trp Pro Gly
                325   330   335
Ser Asp Val Glu Ile Asn Gly Ile Phe Pro Asp Ile Tyr Lys Met Tyr
            340   345   350
Asn Gly Ser Val Pro Phe Glu Glu Arg Ile Leu Ala Val Leu Gln Trp
            355   360   365
Leu Gln Leu Pro Lys Asp Glu Arg Pro His Phe Tyr Thr Leu Tyr Leu
        370   375   380
Glu Glu Pro Asp Ser Ser Gly His Ser Tyr Gly Pro Val Ser Ser Glu
385   390   395   400
Val Ile Lys Ala Leu Gln Arg Val Asp Gly Met Val Gly Met Leu Met
                405   410   415
Asp Gly Leu Lys Glu Leu Asn Leu His Arg Cys Leu Asn Leu Ile Leu
            420   425   430
Ile Ser Asp His Gly Met Glu Gln Gly Ser Cys Lys Lys Tyr Ile Tyr
        435   440   445
Leu Asn Lys Tyr Leu Gly Asp Val Lys Asn Ile Lys Val Ile Tyr Gly
        450   455   460
Pro Ala Ala Arg Leu Arg Pro Ser Asp Val Pro Asp Lys Tyr Tyr Ser

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465                   470                   475                   480
Phe Asn Tyr Glu Gly Ile Ala Arg Asn Leu Ser Cys Arg Glu Pro Asn
                485                   490                   495
Gln His Phe Lys Pro Tyr Leu Lys His Phe Leu Pro Lys Arg Leu His
            500                   505                   510
Phe Ala Lys Ser Asp Arg Ile Glu Pro Leu Thr Phe Tyr Leu Asp Pro
            515                   520                   525
Gln Trp Gln Leu Ala Leu Asn Pro Ser Glu Arg Lys Tyr Cys Gly Ser
    530                   535                   540
Gly Phe His Gly Ser Asp Asn Val Phe Ser Asn Met Gln Ala Leu Phe
545                   550                   555                   560
Val Gly Tyr Gly Pro Gly Phe Lys His Gly Ile Glu Ala Asp Thr Phe
                565                   570                   575
Glu Asn Ile Glu Val Tyr Asn Leu Met Cys Asp Leu Leu Asn Leu Thr
            580                   585                   590
Pro Ala Pro Asn Asn Gly Thr His Gly Ser Leu Asn His Leu Leu Lys
        595                   600                   605
Asn Pro Val Tyr Thr Pro Lys His Pro Lys Glu Val His Pro Leu Val
    610                   615                   620
Gln Cys Pro Phe Thr Arg Asn Pro Arg Asp Asn Leu Gly Cys Ser Cys
625                   630                   635                   640
Asn Pro Ser Ile Leu Pro Ile Glu Asp Phe Gln Thr Gln Phe Asn Leu
                645                   650                   655
Thr Val Ala Glu Glu Lys Ile Ile Lys His Glu Thr Leu Pro Tyr Gly
                660                   665                   670
Arg Pro Arg Val Leu Gln Lys Glu Asn Thr Ile Cys Leu Leu Ser Gln
            675                   680                   685
His Gln Phe Met Ser Gly Tyr Ser Gln Asp Ile Leu Met Pro Leu Trp
        690                   695                   700
Thr Ser Tyr Thr Val Asp Arg Asn Asp Ser Phe Ser Thr Glu Asp Phe
705                   710                   715                   720
Ser Asn Cys Leu Tyr Gln Asp Phe Arg Ile Pro Leu Ser Pro Val His
                725                   730                   735
Lys Cys Ser Phe Tyr Lys Asn Asn Thr Lys Val Ser Tyr Gly Phe Leu
            740                   745                   750
Ser Pro Pro Gln Leu Asn Lys Asn Ser Ser Gly Ile Tyr Ser Glu Ala
        755                   760                   765
Leu Leu Thr Thr Asn Ile Val Pro Met Tyr Gln Ser Phe Gln Val Ile
    770                   775                   780
Trp Arg Tyr Phe His Asp Thr Leu Leu Arg Lys Tyr Ala Glu Glu Arg
785                   790                   795                   800
Asn Gly Val Asn Val Val Ser Gly Pro Val Phe Asp Phe Asp Tyr Asp
                805                   810                   815
Gly Arg Cys Asp Ser Leu Glu Asn Leu Arg Gln Lys Arg Arg Val His
            820                   825                   830
Pro Val Thr Gln Glu Asn Phe Trp Ile Pro Asn Ser Thr Ser Phe Tyr
            835                   840                   845
Val Val Leu Thr Ser Cys Lys Asp Thr Ser Gln Thr Pro Leu His Cys
    850                   855                   860
Glu Asn Leu Asp Thr Leu Gly Phe Pro Phe Cys Leu His Arg Asp Trp
865                   870                   875                   880
Ile Asn Ser Glu Thr Cys Val His Gly Lys His Asp Ser Ser Trp Val
                885                   890                   895
Glu Glu Phe Val Lys Cys Leu His Arg Ala Arg Ile Thr Gly Cys Xaa
            900                   905                   910
Gly Thr Ser Leu Gly Leu Ser Phe Tyr Gln Gln Arg Lys Glu Pro Val
        915                   920                   925
Ser Asp Ile Leu Lys Leu Lys Thr His Leu Pro Thr Phe Ser Gln Glu
    930                   935                   940
Asp
945
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        <210> 1103

<211> 217
<212>Amino acid
<213> Homo sapiens

<400> 1103
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Thr Val Pro Pro Pro Pro Gly Gly Pro Ser Pro Ala Pro Leu His Pro
1               5                   10                  15
Lys Arg Ser Pro Thr Ser Thr Gly Glu Ala Glu Leu Lys Glu Glu Arg
            20                  25                  30
Leu Pro Gly Arg Lys Ala Ser Cys Ser Thr Ala Gly Ser Gly Ser Arg
        35                  40                  45
Gly Leu Pro Pro Leu Ser Pro Met Val Ser Ser Ala His Asn Pro Asn
    50                  55                  60
Lys Ala Glu Ile Pro Glu Arg Arg Lys Asp Ser Thr Ser Thr Pro Asn
65                  70                  75                  80
Asn Leu Pro Pro Ser Met Met Thr Arg Arg Asn Thr Tyr Val Cys Thr
                85                  90                  95
Glu Arg Pro Gly Ala Glu Arg Pro Ser Leu Leu Pro Asn Gly Lys Glu
            100                 105                 110
Asn Ser Ser Gly Thr Pro Arg Val Pro Pro Ala Ser Pro Ser Ser His
        115                 120                 125
Ser Leu Ala Pro Pro Ser Gly Glu Arg Ser Arg Leu Ala Arg Gly Ser
    130                 135                 140
Thr Ile Arg Ser Thr Phe His Gly Gly Gln Val Arg Asp Arg Arg Ala
145                 150                 155                 160
Gly Gly Trp Gly Trp Phe Phe Asn Lys His Ala Leu Gln Arg Ala Pro
                165                 170                 175
Arg Asn Ala Gly Ala Pro Ser Leu Met Pro Gly His Arg Thr Val Leu
            180                 185                 190
Ile Asn Tyr Gly Gly Gly Gln Asp Leu Lys Asn Trp Glu Thr Cys Leu
    195                 200                 205
Ala Ala Pro Pro Asn Lys His Arg Arg
210                 215     217
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<210> 1104
<211> 436
<212>Amino acid
<213> Homo sapiens

<400> 1104
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His Thr Leu His His Ser Ser Pro Thr Ser Glu Ala Glu Glu Phe Val
1               5                   10                  15
Ser Arg Leu Ser Thr Gln Asn Tyr Phe Arg Ser Leu Pro Arg Gly Thr
            20                  25                  30
Ser Asn Met Thr Tyr Gly Thr Phe Asn Phe Leu Gly Gly Arg Leu Met
        35                  40                  45
Ile Pro Asn Thr Gly Ile Ser Leu Leu Ile Pro Pro Asp Ala Ile Pro
    50                  55                  60
Arg Gly Lys Ile Tyr Glu Ile Tyr Leu Thr Leu His Lys Pro Glu Asp
65                  70                  75                  80
Val Arg Leu Pro Leu Ala Gly Cys Gln Thr Leu Leu Ser Pro Ile Val
                85                  90                  95
Ser Cys Gly Pro Pro Gly Val Leu Leu Thr Arg Pro Val Ile Leu Gly
            100                 105                 110
Met Asp His Cys Gly Glu Pro Ser Pro Asp Ser Trp Ser Leu Arg Leu
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                    115                      120                      125
         Lys Lys Gln Ser Cys Glu Gly Ser Trp Glu Asp Val Leu His Leu Gly
              130                      135                      140
         Glu Glu Ala Pro Ser His Leu Tyr Tyr Cys Gln Leu Glu Ala Ser Ala
         145                      150                      155                      160
         Cys Tyr Val Phe Thr Glu Gln Leu Ser Arg Tyr Ala Leu Val Gly Glu
                        165                      170                      175
         Ala Leu Ser Val Ala Ala Ala Lys Arg Leu Lys Leu Leu Leu Phe Ala
                        180                      185                      190
         Pro Val Ala Cys Thr Ser Leu Glu Tyr Asn Ile Leu Val Tyr Cys Leu
                        195                      200                      205
         His Asp Thr His Asp Ala Leu Asn Val Val Val Gln Leu Glu Lys Gln
              210                      215                      220
         Leu Gln Gly Gln Leu Ile Gln Glu Pro Leu Val Leu His Phe Lys Asp
         225                      230                      235                      240
         Ser Tyr His Asn Leu Arg Leu Ser Ile His Asp Val Pro Ser Ser Leu
                        245                      250                      255
         Trp Lys Ser Lys Leu Leu Val Ser Tyr Gln Glu Ile Pro Phe Tyr His
                        260                      265                      270
         Ile Trp Asn Gly Thr Gln Arg Tyr Leu His Cys Thr Phe Thr Leu Glu
                   275                      280                      285
         Arg Val Ser Pro Ser Thr Ser Asp Leu Ala Cys Lys Leu Trp Val Trp
              290                      295                      300
         Gln Val Glu Gly Asp Gly Gln Ser Phe Ser Ile Asn Phe Asn Ile Thr
         305                      310                      315                      320
         Lys Asp Thr Arg Phe Ala Glu Leu Leu Ala Leu Glu Ser Glu Ala Gly
                        325                      330                      335
         Val Pro Ala Leu Val Gly Pro Ser Ala Phe Lys Ile Pro Phe Leu Ile
                        340                      345                      350
         Arg Gln Lys Ile Ile Ser Ser Leu Asp Pro Pro Cys Arg Arg Gly Ala
                        355                      360                      365
         Asp Trp Arg Thr Leu Ala Gln Lys Leu His Leu Asp Ser His Leu Ser
              370                      375                      380
         Phe Phe Ala Ser Lys Pro Ser Pro Thr Ala Met Ile Leu Asn Leu Trp
         385                      390                      395                      400
         Glu Ala Arg His Phe Pro Asn Gly Asn Leu Ser Gln Leu Ala Ala Ala
                        405                      410                      415
         Val Ala Gly Thr Gly Pro Ala Gly Arg Trp Leu Leu Ser Gln Cys Ser
                        420                      425                      430
         Glu Ala Glu Cys
              435 436
```

```
         <210> 1105
         <211> 113
         <212> Amino acid
         <213> Homo sapiens




         <400> 1105
         Gly Ser Ala Ala Gly Gln Val Gln Gln Gln Gln Arg Arg His Gln
         1               5                    10                   15
         Gln Gly Lys Val Thr Val Lys Tyr Asp Arg Lys Glu Leu Arg Lys Arg
                   20                   25                   30
         Leu Val Leu Glu Glu Trp Ile Val Glu Gln Leu Gly Gln Leu Tyr Gly
                   35                   40                   45
         Cys Glu Glu Glu Glu Met Pro Glu Val Glu Ile Asp Ile Asp Asp Leu
              50                   55                   60
         Phe Asp Ala Tyr Ser Asp Glu Gln Arg Ala Ser Lys Leu Gln Glu Ala
         65                   70                   75                   80
         Leu Val Asp Cys Tyr Lys Pro Thr Glu Glu Phe Ile Lys Glu Leu Leu
```

```
                          85                   90                   95
Ser Arg Ile Arg Gly Met Arg Lys Leu Ser Pro Pro Gln Lys Lys Ser
                100                 105                 110
Val
113
```

```
        <210> 1106
        <211> 464
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1106
Ile Met Leu Asp Gly Arg Val Arg Trp Leu Thr Pro Val Ile Ser Ala
  1               5                  10                  15
Leu Trp Glu Ala Glu Met Glu Asp Val Ile Ala Arg Met Gln Asp Glu
                20                  25                  30
Lys Asn Gly Ile Pro Ile Arg Thr Val Lys Ser Phe Leu Ser Lys Ile
            35                  40                  45
Pro Ser Val Phe Ser Gly Ser Asp Ile Val Gln Trp Leu Ile Lys Asn
        50                  55                  60
Leu Thr Ile Glu Asp Pro Val Glu Ala Leu His Leu Gly Thr Leu Met
65                  70                  75                  80
Ala Ala His Gly Tyr Phe Phe Pro Ile Ser Asp His Val Leu Thr Leu
                85                  90                  95
Lys Asp Asp Gly Thr Phe Tyr Arg Phe Gln Thr Pro Tyr Phe Trp Pro
                100                 105                 110
Ser Asn Cys Trp Glu Pro Glu Asn Thr Asp Tyr Ala Val Tyr Leu Cys
            115                 120                 125
Lys Arg Thr Met Gln Asn Lys Ala Arg Leu Glu Leu Ala Asp Tyr Glu
        130                 135                 140
Ala Glu Ser Leu Ala Arg Leu Gln Arg Ala Phe Ala Arg Lys Trp Glu
145                 150                 155                 160
Phe Ile Phe Met Gln Ala Glu Ala Gln Ala Lys Val Asp Lys Lys Arg
                165                 170                 175
Asp Lys Ile Glu Arg Lys Ile Leu Asp Ser Gln Glu Arg Ala Phe Trp
            180                 185                 190
Asp Val His Arg Pro Val Pro Gly Cys Val Asn Thr Thr Glu Val Asp
        195                 200                 205
Ile Lys Lys Ser Ser Arg Met Arg Asn Pro His Lys Thr Arg Lys Ser
        210                 215                 220
Val Tyr Gly Leu Gln Asn Asp Ile Arg Ser His Ser Pro Thr His Thr
225                 230                 235                 240
Pro Thr Pro Glu Thr Lys Pro Pro Thr Glu Asp Glu Leu Gln Gln Gln
                245                 250                 255
Ile Lys Tyr Trp Gln Ile Gln Leu Asp Arg His Arg Leu Lys Met Ser
                260                 265                 270
Lys Val Ala Asp Ser Leu Leu Ser Tyr Thr Glu Gln Tyr Leu Glu Tyr
            275                 280                 285
Asp Pro Phe Leu Leu Pro Pro Asp Pro Ser Asn Pro Trp Leu Ser Asp
        290                 295                 300
Asp Thr Thr Phe Trp Glu Leu Glu Ala Ser Lys Glu Pro Ser Gln Gln
305                 310                 315                 320
Arg Val Lys Arg Trp Gly Phe Gly Met Asp Glu Ala Leu Lys Asp Pro
                325                 330                 335
Val Gly Arg Glu Gln Phe Leu Lys Phe Leu Glu Ser Glu Phe Ser Ser
            340                 345                 350
Glu Asn Leu Arg Phe Trp Leu Ala Val Glu Asp Leu Lys Lys Arg Pro
        355                 360                 365
Ile Lys Glu Val Pro Ser Arg Val Gln Glu Ile Trp Gln Glu Phe Leu
```

633

```
        370                        375                        380
Ala Pro Gly Ala Pro Ser Ala Ile Asn Leu Asp Ser Lys Ser Tyr Asp
385                        390                        395                        400
Lys Thr Thr Gln Asn Val Lys Glu Pro Gly Arg Tyr Thr Phe Glu Asp
                405                        410                        415
Ala Gln Glu His Ile Tyr Lys Leu Met Lys Ser Asp Ser Tyr Pro Arg
                420                        425                        430
Phe Ile Arg Ser Ser Ala Tyr Gln Glu Leu Leu Gln Ala Lys Lys Lys
            435                        440                        445
Gly Lys Ser Leu Thr Ser Lys Arg Leu Thr Ser Leu Ala Gln Ser Tyr
    450                        455                        460                464
```

```
        <210> 1107
        <211> 153
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1107
Gly Thr Arg Asp Tyr Pro Arg Ile Val Asn His Leu Asp His Thr Tyr
1                   5                        10                        15
Val Thr Ala Pro Gln Ala Phe Met Met Phe Gln Tyr Phe Val Lys Val
                20                        25                        30
Val Pro Thr Val Tyr Met Lys Val Asp Gly Glu Val Leu Thr Thr Asn
            35                        40                        45
Gln Ile Tyr Val Thr Arg His Glu Lys Ala Ala Tyr Val Leu Met Gly
    50                        55                        60
Asp Gln Gly Leu Pro Gly Val Phe Ile Leu Tyr Glu Leu Ser Pro Met
65                        70                        75                        80
Met Val Asn Leu Thr Glu Ile His Thr Phe Phe Ser Leu Phe Leu Thr
                85                        90                        95
Ile Val Gly Ala Thr Ile Gly Gly Met Phe Phe Glu His Phe Val Ile
            100                       105                       110
Asn Tyr Leu Thr His Lys Trp Gly Leu Gly Phe Tyr Phe Lys Asn Glu
        115                       120                       125
Asn Ser Leu Gln Gly Gly His Arg Thr Leu Tyr Gly Val Asn Phe Phe
    130                       135                       140
Met Tyr Trp Ser Leu Arg Gly Gly Ser
145                   150           153
```

```
        <210> 1108
        <211> 506
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1108
Ser Val Trp Trp Asn Ser Gln Arg Gln Phe Val Val Arg Ala Trp Gly
1                   5                        10                        15
Cys Ala Gly Pro Cys Gly Arg Ala Val Phe Leu Ala Phe Gly Leu Gly
                20                        25                        30
Leu Gly Leu Ile Glu Glu Lys Gln Ala Glu Ser Arg Arg Ala Val Ser
            35                        40                        45
Ala Cys Gln Glu Ile Gln Ala Ile Phe Thr Gln Lys Ser Lys Pro Gly
```

```
         50                        55                        60
Pro Asp Pro Leu Asp Thr Arg Arg Leu Gln Gly Phe Arg Leu Glu Glu
 65                        70                        75               80
Tyr Leu Ile Gly Gln Ser Ile Gly Lys Gly Cys Ser Ala Ala Val Tyr
                    85                        90                   95
Glu Ala Thr Met Pro Thr Leu Pro Gln Asn Leu Glu Val Thr Lys Ser
               100                       105                  110
Thr Gly Leu Leu Pro Gly Arg Gly Pro Gly Thr Ser Ala Pro Gly Glu
               115                       120                  125
Gly Gln Glu Arg Ala Pro Gly Ala Pro Ala Phe Pro Leu Ala Ile Lys
130                       135                       140
Met Met Trp Asn Ile Ser Ala Gly Ser Ser Ser Glu Ala Ile Leu Asn
145                       150                       155               160
Thr Met Ser Gln Glu Leu Val Pro Ala Ser Arg Val Ala Leu Ala Gly
               165                       170                  175
Glu Tyr Gly Ala Val Thr Tyr Arg Lys Ser Lys Arg Gly Pro Lys Gln
               180                       185                  190
Leu Ala Pro His Pro Asn Ile Ile Arg Val Leu Arg Ala Phe Thr Ser
               195                       200                  205
Ser Val Pro Leu Leu Pro Gly Ala Leu Val Asp Tyr Pro Asp Val Leu
210                       215                       220
Pro Ser Arg Leu His Pro Glu Gly Leu Gly His Gly Arg Thr Leu Phe
225                       230                       235               240
Leu Val Met Lys Asn Tyr Pro Cys Thr Leu Arg Gln Tyr Leu Cys Val
                    245                       250                  255
Asn Thr Pro Ser Pro Arg Leu Ala Ala Met Met Leu Leu Gln Leu Leu
                    260                       265                  270
Glu Gly Val Asp His Leu Val Gln Gln Gly Ile Ala His Arg Asp Leu
               275                       280                  285
Lys Ser Asp Asn Ile Leu Val Glu Leu Asp Pro Asp Gly Cys Pro Trp
290                       295                       300
Leu Val Ile Ala Asp Phe Gly Cys Cys Leu Ala Asp Glu Ser Ile Gly
305                       310                       315               320
Leu Gln Leu Pro Phe Ser Ser Trp Tyr Val Asp Arg Gly Gly Asn Gly
                    325                       330                  335
Cys Leu Met Ala Pro Glu Val Ser Thr Ala Arg Pro Gly Pro Arg Ala
               340                       345                  350
Val Ile Asp Tyr Ser Lys Ala Asp Ala Trp Ala Val Gly Ala Ile Ala
               355                       360                  365
Tyr Glu Ile Phe Gly Leu Val Asn Pro Phe Tyr Gly Gln Gly Lys Ala
370                       375                       380
His Leu Glu Ser Arg Ser Tyr Gln Glu Ala Gln Leu Pro Ala Leu Pro
385                       390                       395               400
Glu Ser Val Pro Pro Asp Val Arg Gln Leu Val Arg Ala Leu Leu Gln
               405                       410                  415
Arg Glu Ala Ser Lys Arg Pro Ser Ala Arg Val Ala Ala Asn Val Leu
               420                       425                  430
His Leu Ser Leu Trp Gly Glu His Ile Leu Ala Leu Lys Asn Leu Lys
               435                       440                  445
Leu Asp Lys Met Val Gly Trp Leu Leu Gln Gln Ser Ala Ala Thr Leu
450                       455                       460
Leu Ala Asn Arg Leu Thr Glu Lys Cys Cys Val Glu Thr Lys Met Lys
465                       470                       475               480
Met Leu Phe Leu Ala Asn Leu Glu Cys Glu Thr Leu Cys Gln Ala Ala
                    485                       490                  495
Leu Leu Leu Cys Ser Trp Arg Ala Ala Leu
               500                       505 506
```

```
<210> 1109
<211> 382
<212>Amino acid
<213> Homo sapiens
```

<400> 1109

Arg	Pro	Leu	Leu	Arg	Leu	Ala	Glu	Leu	Pro	Asp	His	Cys	Tyr	Arg	Met
1				5					10					15	

```
        <400> 1109
Arg Pro Leu Leu Arg Leu Ala Glu Leu Pro Asp His Cys Tyr Arg Met
 1               5                  10                  15
Asn Ser Ser Pro Ala Gly Thr Pro Ser Pro Gln Pro Ser Arg Ala Asn
             20                  25                  30
Gly Asn Ile Asn Leu Gly Pro Ser Ala Asn Pro Asn Ala Gln Pro Thr
         35                  40                  45
Asp Phe Asp Phe Leu Lys Val Ile Gly Lys Gly Asn Tyr Gly Lys Val
     50                  55                  60
Leu Leu Ala Lys Arg Lys Ser Asp Gly Ala Phe Tyr Ala Val Lys Val
 65                  70              .       75                  80
Leu Gln Lys Lys Ser Ile Leu Lys Lys Lys Glu Gln Ser His Ile Met
                 85                  90                  95
Ala Glu Arg Ser Val Leu Leu Lys Asn Val Arg His Pro Phe Leu Val
               100                 105                 110
Gly Leu Arg Tyr Ser Phe Gln Thr Pro Glu Lys Leu Tyr Phe Val Leu
             115                 120                 125
Asp Tyr Val Asn Gly Gly Glu Leu Phe Phe His Leu Gln Arg Glu Arg
     130                 135                 140
Arg Phe Leu Glu Pro Arg Ala Arg Phe Tyr Ala Ala Glu Val Ala Ser
145                 150                 155                 160
Ala Ile Gly Tyr Leu His Ser Leu Asn Ile Ile Tyr Arg Asp Leu Lys
                 165                 170                 175
Pro Glu Asn Ile Leu Leu Asp Cys Gln Gly His Val Val Leu Thr Asp
             180                 185                 190
Phe Gly Leu Cys Lys Glu Gly Val Glu Pro Glu Asp Thr Thr Ser Thr
         195                 200                 205
Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val Leu Arg Lys Glu
     210                 215                 220
Pro Tyr Asp Arg Ala Val Asp Trp Trp Cys Leu Gly Ala Val Leu Tyr
225                 230                 235                 240
Glu Met Leu His Gly Leu Pro Pro Phe Tyr Ser Gln Asp Val Ser Gln
                 245                 250                 255
Met Tyr Glu Asn Ile Leu His Gln Pro Leu Gln Ile Pro Gly Gly Arg
             260                 265                 270
Thr Val Ala Ala Cys Asp Leu Leu Gln Ser Leu Leu His Lys Asp Gln
         275                 280                 285
Arg Gln Arg Leu Gly Ser Lys Ala Asp Phe Leu Glu Ile Lys Asn His
     290                 295                 300
Val Phe Phe Ser Pro Ile Asn Trp Asp Asp Leu Tyr His Lys Arg Leu
305                 310                 315                 320
Thr Pro Pro Phe Asn Pro Asn Val Thr Gly Pro Ala Asp Leu Lys His
             325                 330                 335
Phe Asp Pro Glu Phe Thr Gln Glu Ala Val Ser Lys Ser Ile Gly Cys
             340                 345                 350
Thr Pro Asp Thr Val Ala Ser Ser Ser Gly Ala Ser Ser Ala Phe Leu
         355                 360                 365
Gly Phe Ser Tyr Ala Pro Glu Asp Asp Asp Ile Leu Asp Cys
370                 375                 380     382
```

<210> 1110
<211> 535
<212>Amino acid
<213> Homo sapiens

```
    <400> 1110
Arg Pro Gln Thr Leu Lys Gly His Gln Glu Lys Ile Arg Gln Arg Gln
1               5                   10                  15
Ser Ile Leu Pro Pro Pro Gln Gly Pro Ala Pro Ile Pro Phe Gln His
            20                  25                  30
Arg Gly Gly Asp Ser Pro Glu Ala Lys Asn Arg Val Gly Pro Gln Val
        35                  40                  45
Pro Leu Ser Glu Pro Gly Phe Arg Arg Arg Glu Ser Gln Glu Glu Pro
    50                  55                  60
Arg Ala Val Leu Ala Gln Lys Ile Glu Lys Glu Thr Gln Ile Leu Asn
65                  70                  75                  80
Cys Ala Leu Asp Asp Ile Glu Trp Phe Val Ala Arg Leu Gln Lys Ala
                85                  90                  95
Ala Glu Ala Phe Lys Gln Leu Asn Gln Arg Lys Lys Gly Lys Lys Lys
            100                 105                 110
Gly Lys Lys Ala Pro Ala Glu Gly Val Leu Thr Leu Arg Ala Arg Pro
    115                 120                 125
Pro Ser Glu Gly Glu Phe Ile Asp Cys Phe Gln Lys Ile Lys Leu Ala
    130                 135                 140
Ile Asn Leu Leu Ala Lys Leu Gln Lys His Ile Gln Asn Pro Ser Ala
145                 150                 155                 160
Ala Glu Leu Val His Phe Leu Phe Gly Pro Leu Asp Leu Ile Val Asn
                165                 170                 175
Thr Cys Ser Gly Pro Asp Ile Ala Arg Ser Val Ser Cys Pro Leu Leu
            180                 185                 190
Ser Arg Asp Ala Val Asp Phe Leu Arg Gly His Leu Val Pro Lys Glu
        195                 200                 205
Met Ser Leu Trp Glu Ser Leu Gly Glu Ser Trp Met Arg Pro Arg Ser
    210                 215                 220
Glu Trp Pro Arg Glu Pro Gln Val Pro Leu Tyr Val Pro Lys Phe His
225                 230                 235                 240
Ser Gly Trp Glu Pro Pro Val Asp Val Leu Gln Glu Ala Pro Trp Glu
                245                 250                 255
Val Glu Gly Leu Ala Ser Ala Pro Ile Glu Glu Val Ser Pro Val Ser
            260                 265                 270
Arg Gln Ser Ile Arg Asn Ser Gln Lys His Ser Pro Thr Ser Glu Pro
    275                 280                 285
Thr Pro Pro Gly Asp Ala Leu Pro Pro Val Ser Ser Pro His Thr His
    290                 295                 300
Arg Gly Tyr Gln Pro Thr Pro Ala Met Ala Lys Tyr Val Lys Ile Leu
305                 310                 315                 320
Tyr Asp Phe Thr Ala Arg Asn Ala Asn Glu Leu Ser Val Leu Lys Asp
                325                 330                 335
Glu Val Leu Glu Val Leu Glu Asp Gly Arg Gln Trp Trp Lys Leu Arg
            340                 345                 350
Ser Arg Ser Gly Gln Ala Gly Tyr Val Pro Cys Asn Ile Leu Gly Glu
    355                 360                 365
Ala Arg Pro Glu Asp Ala Gly Ala Pro Phe Glu Gln Ala Gly Gln Lys
    370                 375                 380
Tyr Trp Gly Pro Ala Ser Pro Thr His Lys Leu Pro Pro Ser Phe Pro
385                 390                 395                 400
Gly Asn Lys Asp Glu Leu Met Gln His Met Asp Glu Val Asn Asp Glu
                405                 410                 415
Leu Ile Arg Lys Ile Ser Asn Ile Arg Ala Gln Pro Gln Arg His Phe
            420                 425                 430
Arg Val Glu Arg Ser Gln Pro Val Ser Gln Pro Leu Thr Tyr Glu Ser
        435                 440                 445
Gly Pro Asp Glu Val Arg Ala Trp Leu Glu Ala Lys Ala Phe Ser Pro
    450                 455                 460
Arg Ile Val Glu Asn Leu Gly Ile Leu Thr Gly Pro Gln Leu Phe Ser
465                 470                 475                 480
Leu Asn Lys Glu Glu Leu Lys Lys Val Cys Gly Glu Glu Gly Val Arg
                485                 490                 495
Val Tyr Ser Gln Leu Thr Met Gln Lys Ala Phe Leu Glu Lys Gln Gln
```

637

```
              500                      505                      510
Ser Gly Ser Glu Leu Glu Glu Leu Met Asn Lys Phe His Ser Met Asn
         515                      520                      525
Gln Arg Arg Gly Glu Asp Ser
    530                      535
```

```
      <210> 1111
      <211> 346
      <212> Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(346)
      <223> X = any amino acid or stop code
```

```
      <400> 1111
Ala Trp His Glu Gly Leu Val Ser Ser Pro Ala Ile Gly Ala Tyr Leu
  1               5                  10                  15
Ser Ala Ser Tyr Gly Asp Ser Leu Val Val Leu Val Ala Thr Val Val
             20                  25                  30
Ala Leu Leu Asp Ile Cys Phe Ile Leu Val Ala Val Pro Glu Ser Leu
         35                  40                  45
Pro Glu Lys Met Arg Pro Val Ser Trp Gly Ala Gln Ile Ser Trp Lys
     50                  55                  60
Gln Ala Asp Pro Phe Ala Ser Leu Lys Lys Val Gly Lys Asp Ser Thr
 65                  70                  75                  80
Val Leu Leu Ile Cys Ile Thr Val Cys Leu Ser Tyr Leu Pro Glu Ala
                 85                  90                  95
Gly Gln Tyr Ser Ser Phe Phe Leu Tyr Leu Arg Gln Val Ile Gly Phe
             100                 105                 110
Gly Ser Val Lys Ile Ala Ala Phe Ile Ala Met Val Gly Ile Leu Ser
         115                 120                 125
Ile Val Ala Gln Thr Ala Phe Leu Ser Ile Leu Met Arg Ser Leu Gly
     130                 135                 140
Asn Lys Asn Thr Val Leu Leu Gly Leu Gly Phe Gln Met Leu Gln Leu
145                 150                 155                 160
Ala Trp Tyr Gly Phe Gly Ser Gln Ala Trp Met Met Trp Ala Ala Gly
             165                 170                 175
Thr Val Ala Ala Met Ser Ser Ile Thr Phe Pro Ala Ile Ser Ala Leu
           180                 185                 190
Val Ser Arg Asn Ala Glu Ser Asp Gln Gln Gly Val Ala Gln Gly Ile
         195                 200                 205
Ile Thr Gly Ile Arg Gly Leu Cys Asn Gly Leu Gly Pro Ala Leu Tyr
     210                 215                 220
Gly Phe Ile Phe Tyr Met Phe His Val Glu Leu Thr Glu Leu Gly Pro
225                 230                 235                 240
Lys Leu Asn Ser Asn Asn Val Pro Leu Gln Gly Ala Val Ile Pro Gly
             245                 250                 255
Pro Pro Phe Leu Phe Gly Ala Cys Ile Val Leu Met Ser Phe Leu Ala
         260                 265                 270
Ala Leu Phe Ile Pro Glu Tyr Ser Lys Ala Ser Gly Val Gln Lys His
         275                 280                 285
Ser Asn Ser Ser Ser Gly Ser Leu Thr Asn Thr Pro Glu Arg Gly Ser
     290                 295                 300
Asp Glu Asp Ile Glu Pro Leu Leu Gln Asp Ser Ser Ile Trp Glu Leu
305                 310                 315                 320
Ser Ser Phe Glu Glu Pro Gly Asn Gln Cys Thr Glu Leu Xaa Thr Arg
             325                 330                 335
```

```
Gln Lys Val Gly Phe Cys Ile Arg His Leu
          340                   345 346
```

```
<210> 1112
<211> 647
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1112
Met Ala Ala Gly Leu Ala Thr Trp Leu Pro Phe Ala Arg Ala Ala Ala
 1               5                  10                  15
Val Gly Trp Leu Pro Leu Ala Gln Gln Pro Leu Pro Pro Ala Pro Gly
             20                  25                  30
Val Lys Ala Ser Arg Gly Asp Glu Val Leu Val Val Asn Val Ser Gly
         35                  40                  45
Arg Arg Phe Glu Thr Trp Lys Asn Thr Leu Asp Arg Tyr Pro Asp Thr
         50                  55                  60
Leu Leu Gly Ser Ser Glu Lys Glu Phe Phe Tyr Asp Ala Asp Ser Gly
 65                  70                  75                  80
Glu Tyr Phe Phe Asp Arg Asp Pro Asp Met Phe Arg His Val Leu Asn
                 85                  90                  95
Phe Tyr Arg Thr Gly Arg Leu His Cys Pro Arg Gln Glu Cys Ile Gln
             100                 105                 110
Ala Phe Asp Glu Glu Leu Ala Phe Tyr Gly Leu Val Pro Glu Leu Val
         115                 120                 125
Gly Asp Cys Cys Leu Glu Glu Tyr Arg Asp Arg Lys Lys Glu Asn Ala
     130                 135                     140
Glu Arg Leu Ala Glu Asp Glu Glu Ala Glu Gln Ala Gly Asp Gly Pro
145                 150                 155                 160
Ala Leu Pro Ala Gly Ser Ser Leu Arg Gln Arg Leu Trp Arg Ala Phe
                 165                 170                 175
Glu Asn Pro His Thr Ser Thr Ala Ala Leu Val Phe Tyr Tyr Val Thr
             180                 185                 190
Gly Phe Phe Ile Ala Val Ser Val Ile Ala Asn Val Val Glu Thr Ile
         195                 200                 205
Pro Cys Arg Gly Ser Ala Arg Arg Ser Ser Arg Glu Gln Pro Cys Gly
     210                 215                 220
Glu Arg Phe Pro Gln Ala Phe Phe Cys Met Asp Thr Ala Cys Val Leu
225                 230                 235                 240
Ile Phe Thr Gly Glu Tyr Leu Leu Arg Leu Phe Ala Ala Pro Ser Arg
                 245                 250                 255
Cys Arg Phe Leu Arg Ser Val Met Ser Leu Ile Asp Val Val Ala Ile
         260                 265                 270
Leu Pro Tyr Tyr Ile Gly Leu Leu Val Pro Lys Asn Asp Asp Val Ser
     275                 280                 285
Gly Ala Phe Val Thr Leu Arg Val Phe Arg Val Phe Arg Ile Phe Lys
     290                 295                 300
Phe Ser Arg His Ser Gln Gly Leu Arg Ile Leu Gly Tyr Thr Leu Lys
305                 310                 315                 320
Ser Cys Ala Ser Glu Leu Gly Phe Leu Leu Phe Ser Leu Thr Met Ala
                 325                 330                 335
Ile Ile Ile Phe Ala Thr Val Met Phe Tyr Ala Glu Lys Gly Thr Asn
             340                 345                 350
Lys Thr Asn Phe Thr Ser Ile Pro Ala Ala Phe Trp Tyr Thr Ile Val
         355                 360                 365
Thr Met Thr Thr Leu Gly Tyr Gly Asp Met Val Pro Ser Thr Ile Ala
     370                 375                 380
Gly Lys Ile Phe Gly Ser Ile Cys Ser Leu Ser Gly Val Leu Val Ile
385                 390                 395                 400
```

639

```
Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Ser Arg Ile Tyr His
            405             410                 415
Gln Asn Gln Arg Ala Asp Lys Arg Arg Ala Gln Gln Lys Val Arg Leu
            420             425                 430
Ala Arg Ile Arg Leu Ala Lys Ser Gly Thr Thr Asn Ala Phe Leu Gln
            435             440                 445
Tyr Lys Gln Asn Gly Gly Leu Glu Asp Ser Gly Ser Gly Glu Glu Gln
            450             455                 460
Ala Val Cys Val Arg Asn Arg Ser Ala Phe Glu Gln Gln His His His
465             470                 475                 480
Leu Leu His Cys Leu Glu Lys Thr Thr Cys His Glu Phe Thr Asp Glu
            485             490                 495
Leu Thr Phe Ser Glu Ala Leu Gly Ala Val Ser Pro Gly Gly Arg Thr
            500             505                 510
Ser Arg Ser Thr Ser Val Ser Ser Gln Pro Val Gly Pro Gly Ser Leu
            515             520                 525
Leu Ser Ser Cys Cys Pro Arg Arg Ala Lys Arg Arg Ala Ile Arg Leu
            530             535                 540
Ala Asn Ser Thr Ala Ser Val Ser Arg Gly Ser Met Gln Glu Leu Asp
545             550                 555                 560
Met Leu Ala Gly Leu Arg Arg Ser His Ala Pro Gln Ser Arg Ser Ser
            565             570                 575
Leu Asn Ala Lys Pro His Asp Ser Leu Asp Leu Asn Cys Asp Ser Gly
            580             585                 590
Asp Phe Val Ala Ala Ile Ile Ser Ile Pro Thr Pro Pro Ala Asn Thr
            595             600                 605
Pro Asp Glu Ser Gln Pro Ser Ser Pro Gly Gly Gly Gly Arg Ala Gly
            610             615                 620
Ser Thr Leu Arg Asn Ser Ser Leu Gly Thr Pro Cys Leu Phe Pro Glu
625             630                 635                 640
Thr Val Lys Ile Ser Ser Leu
            645     647
```

```
<210> 1113
<211> 220
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(220)
<223> X = any amino acid or stop code



<400> 1113
Gly Trp Gly Lys Pro Phe Lys Asp Trp Thr Thr Gly Gly Gln Asp Thr
1               5               10                  15
Gly Gly Glu Pro Ala Leu Leu Val Gly Ala Gly Glu Gly Arg Ala Pro
            20              25                  30
Arg Leu Asn Cys Pro Ser Gly Gln Ile Arg Ser Pro Gly Pro Gly Asp
            35              40                  45
Leu Ser Ile Tyr Asp Asn Trp Ile Arg Tyr Phe Asn Arg Ser Ser Pro
    50              55                  60
Val Tyr Gly Leu Val Pro Arg Ser Lys Thr Ser Ala Arg Ile Tyr Pro
65              70                  75                  80
Thr Tyr His Thr Ala Phe Asp Thr Phe Asp Tyr Val Asp Lys Phe Leu
            85                  90                  95
Asp Pro Gly Glu Glu Gly Asp Lys Gly His Pro Glu Thr Arg Thr Gly
            100             105                 110
Glu Ala Glu Asp Xaa Ala Leu Ala Leu Ser Pro Cys Arg Arg Phe Ser
```

```
                    115                     120                     125
Ser His Gln Ala Val Ala Arg Thr Ala Gly Ser Val Ile Leu Arg Leu
        130                     135                     140
Ser Asp Ser Phe Phe Leu Pro Leu Lys Val Ser Asp Tyr Ser Glu Thr
145                     150                     155                     160
Leu Arg Ser Phe Leu Gln Ala Ala Gln Gln Asp Leu Gly Ala Leu Leu
                165                     170                     175
Glu Gln His Ser Ile Ser Leu Gly Pro Leu Val Thr Ala Val Glu Lys
                    180                     185                     190
Phe Glu Ala Glu Ala Ala Ala Leu Gly Gln Arg Ile Ser Thr Leu Gln
                195                     200                     205
Lys Gly Ser Pro Asp Pro Leu Gln Val Arg Met Leu
            210                     215                     220
```

```
<210> 1114
<211> 382
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1114
Gly Ile Arg Gly Gly Gly Ser Leu Ala Ser Gly Gly Pro Gly Pro Gly
1               5                       10                      15
His Ala Ser Leu Ser Gln Arg Leu Arg Leu Tyr Leu Ala Asp Ser Trp
                20                      25                      30
Asn Gln Cys Asp Leu Val Ala Leu Thr Cys Phe Leu Leu Gly Val Gly
            35                      40                      45
Cys Arg Leu Thr Pro Gly Leu Tyr His Leu Gly Arg Thr Val Leu Cys
        50                      55                      60
Ile Asp Phe Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val
65                      70                      75                      80
Asn Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys
                85                      90                      95
Asp Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr
                100                     105                     110
Gly Val Ala Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro
            115                     120                     125
Ser Ile Leu Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly
        130                     135                     140
Gln Ile Pro Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn
145                     150                     155                     160
Cys Ser Ser Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala
                165                     170                     175
Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu
                180                     185                     190
Val Ile Phe Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu Leu Ile
                195                     200                     205
Ala Met Phe Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn Ser Asp Leu
            210                     215                     220
Tyr Trp Lys Ala Gln Arg Tyr Arg Leu Ile Arg Glu Phe His Ser Arg
225                     230                     235                     240
Pro Ala Leu Ala Pro Pro Phe Ile Val Ile Ser His Leu Arg Leu Leu
                245                     250                     255
Leu Arg Gln Leu Cys Arg Arg Pro Arg Ser Pro Gln Pro Ser Ser Pro
            260                     265                     270
Ala Leu Glu His Phe Arg Val Tyr Leu Ser Lys Glu Ala Glu Arg Lys
        275                     280                     285
Leu Leu Thr Trp Glu Ser Val His Lys Glu Asn Phe Leu Leu Ala Arg
    290                     295                     300
Ala Arg Asp Lys Arg Glu Ser Asp Ser Glu Arg Leu Lys Arg Thr Ser
```

305   310   ·315   320
Gln Lys Val Asp Leu Ala Leu Lys Gln Leu Gly His Ile Arg Glu Tyr
              325   330   335
Glu Gln Arg Leu Lys Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg
          340   345   350
Val Leu Gly Trp Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro
          355   360   365
Pro Gly Gly Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
    370   375   380   382

        <210> 1115
        <211> 109
        <212>Amino acid
        <213> Homo sapiens

        <400> 1115
Leu Ile Lys Leu Cys Lys Ser Lys Ala Lys Ser Cys Glu Asn Asp Leu
    1   5   10   15
Glu Met Gly Met Leu Asn Ser Lys Phe Lys Lys Thr Arg Tyr Gln Ala
              20   25   30
Gly Met Arg Asn Ser Glu Asn Leu Thr Ala Asn Asn Thr Leu Ser Lys
          35   40   45
Pro Thr Arg Tyr Gln Gly Glu Leu Lys Glu Ile Lys Gln Asp Ile Ser
    50   55   60
Ser Leu Arg Tyr Glu Leu Leu Glu Glu Lys Ser Gln Ala Thr Gly Glu
65   70   75   80
Leu Ala Asp Leu Ile Gln Gln Leu Ser Glu Lys Phe Gly Lys Asn Leu
              85   90   95
Asn Lys Asp His Leu Arg Val Asn Lys Gly Lys Asp Ile
          100   105   109

        <210> 1116
        <211> 679
        <212>Amino acid
        <213> Homo sapiens

        <400> 1116
Leu Pro Leu Leu His Ala Gly Phe Asn Arg Arg Phe Met Glu Asn Ser
    1   5   10   15
Ser Ile Ile Ala Cys Tyr Asn Glu Leu Ile Gln Ile Glu His Gly Glu
              20   25   30
Val Arg Ser Gln Phe Lys Leu Arg Ala Cys Asn Ser Val Phe Thr Ala
          35   40   45
Leu Asp His Cys His Glu Ala Ile Glu Ile Thr Ser Asp Asp His Val
          50   55   60
Ile Gln Tyr Val Asn Pro Ala Phe Glu Arg Met Met Gly Tyr His Lys
65   70   75   80
Gly Glu Leu Leu Gly Lys Glu Leu Ala Asp Leu Pro Lys Ser Asp Lys
              85   90   95
Asn Arg Ala Asp Leu Leu Asp Thr Ile Asn Thr Cys Ile Lys Lys Gly
          100   105   110
Lys Glu Trp Gln Gly Val Tyr Tyr Ala Arg Arg Lys Ser Gly Asp Ser
      115   120   125
Ile Gln Gln His Val Lys Ile Thr Pro Val Ile Gly Gln Gly Gly Lys

```
            130                    135                    140
Ile Arg His Phe Val Ser Leu Lys Lys Leu Cys Cys Thr Thr Asp Asn
145                    150                    155                    160
Asn Lys Gln Ile His Lys Ile His Arg Asp Ser Gly Asp Asn Ser Gln
                       165                    170                    175
Thr Glu Pro His Ser Phe Arg Tyr Lys Asn Arg Arg Lys Glu Ser Ile
                  180                    185                    190
Asp Val Lys Ser Ile Ser Ser Arg Gly Ser Asp Ala Pro Ser Leu Gln
             195                    200                    205
Asn Arg Arg Tyr Pro Ser Met Ala Arg Ile His Ser Met Thr Ile Glu
        210                    215                    220
Ala Pro Ile Thr Lys Val Ile Asn Ile Ile Asn Ala Ala Gln Glu Asn
225                    230                    235                    240
Ser Pro Val Thr Val Ala Glu Ala Leu Asp Arg Val Leu Glu Ile Leu
                  245                    250                    255
Arg Thr Thr Glu Leu Tyr Ser Pro Gln Leu Gly Thr Lys Asp Glu Asp
             260                    265                    270
Pro His Thr Ser Asp Leu Val Gly Gly Leu Met Thr Asp Gly Leu Arg
        275                    280                    285
Arg Leu Ser Gly Asn Glu Tyr Val Phe Thr Lys Asn Val His Gln Ser
   290                    295                    300
His Ser His Leu Ala Met Pro Ile Thr Ile Asn Asp Val Pro Pro Cys
305                    310                    315                    320
Ile Ser Gln Leu Leu Asp Asn Glu Glu Ser Trp Asp Phe Asn Ile Phe
                  325                    330                    335
Glu Leu Glu Ala Ile Thr His Lys Arg Pro Leu Val Tyr Leu Gly Leu
             340                    345                    350
Lys Val Phe Ser Arg Phe Gly Val Cys Glu Phe Leu Asn Cys Ser Glu
        355                    360                    365
Thr Thr Leu Arg Ala Trp Phe Gln Val Ile Glu Ala Asn Tyr His Ser
   370                    375                    380
Ser Asn Ala Tyr His Asn Ser Thr His Ala Ala Asp Val Leu His Ala
385                    390                    395                    400
Thr Ala Phe Phe Leu Gly Lys Glu Arg Val Lys Gly Ser Leu Asp Gln
                  405                    410                    415
Leu Asp Glu Val Ala Ala Leu Ile Ala Ala Thr Val His Asp Val Asp
             420                    425                    430
His Pro Gly Arg Thr Asn Ser Phe Leu Cys Asn Ala Gly Ser Glu Leu
        435                    440                    445
Ala Val Leu Tyr Asn Asp Thr Ala Val Leu Glu Ser His His Thr Ala
   450                    455                    460
Leu Ala Phe Gln Leu Thr Val Lys Asp Thr Lys Cys Asn Ile Phe Lys
465                    470                    475                    480
Asn Ile Asp Arg Gly Asn His Tyr Arg Thr Leu Arg Gln Ala Ile Ile
                  485                    490                    495
Asp Met Val Leu Ala Thr Glu Met Thr Lys His Phe Glu His Val Asn
             500                    505                    510
Lys Phe Val Asn Ser Ile Asn Lys Pro Met Ala Ala Glu Ile Glu Gly
        515                    520                    525
Ser Asp Cys Glu Cys Asn Pro Ala Gly Lys Asn Phe Pro Glu Asn Gln
        530                    535                    540
Ile Leu Ile Lys Arg Met Met Ile Lys Cys Ala Asp Val Ala Asn Pro
545                    550                    555                    560
Cys Arg Pro Leu Asp Leu Cys Ile Glu Trp Ala Gly Arg Ile Ser Glu
                  565                    570                    575
Glu Tyr Phe Ala Gln Thr Asp Glu Glu Lys Arg Gln Gly Leu Pro Val
             580                    585                    590
Val Met Pro Val Phe Asp Arg Asn Thr Cys Ser Ile Pro Lys Ser Gln
        595                    600                    605
Ile Ser Phe Ile Asp Tyr Phe Ile Thr Asp Met Phe Asp Ala Trp Asp
   610                    615                    620
Ala Phe Ala His Leu Pro Ala Leu Met Gln His Leu Ala Asp Asn Tyr
625                    630                    635                    640
Lys His Trp Lys Thr Leu Asp Asp Leu Lys Cys Lys Ser Leu Arg Leu
```

```
                         645                650                655
Pro Ser Asp Arg Leu Lys Pro Ser His Arg Gly Gly Leu Leu Thr Asp
            660                665                670
Lys Gly His Cys Glu Ser Gln
        675                679


        <210> 1117
        <211> 1193
        <212>Amino acid
        <213> Homo sapiens




        <400> 1117
Ala Phe Leu Ser Lys Val Glu Glu Asp Asp Tyr Pro Ser Glu Glu Leu
 1               5                10               15
Leu Glu Asp Glu Asn Ala Ile Asn Ala Lys Arg Ser Lys Glu Lys Asn
            20                25               30
Pro Gly Asn Gln Gly Arg Gln Phe Asp Val Asn Leu Gln Val Pro Asp
        35                40               45
Arg Ala Val Leu Gly Thr Ile His Pro Asp Pro Glu Ile Glu Glu Ser
    50               55               60
Lys Gln Glu Thr Ser Met Ile Leu Asp Ser Glu Lys Thr Ser Glu Thr
65               70               75               80
Ala Ala Lys Gly Val Asn Thr Gly Gly Arg Glu Pro Asn Thr Met Val
            85               90               95
Glu Lys Glu Arg Pro Leu Ala Asp Lys Lys Ala Gln Arg Pro Phe Glu
            100              105              110
Arg Ser Asp Phe Ser Asp Ser Ile Lys Ile Gln Thr Pro Glu Leu Gly
        115              120              125
Glu Val Phe Gln Asn Lys Asp Ser Asp Tyr Leu Lys Asn Asp Asn Pro
    130              135              140
Glu Glu His Leu Lys Thr Ser Gly Leu Ala Gly Glu Pro Glu Gly Glu
145              150              155              160
Leu Ser Lys Glu Asp His Glu Asn Thr Glu Lys Tyr Met Gly Thr Glu
            165              170              175
Ser Gln Gly Ser Ala Ala Ala Glu Pro Glu Asp Asp Ser Phe His Trp
        180              185              190
Thr Pro His Thr Ser Val Glu Pro Gly His Ser Asp Lys Arg Glu Asp
        195              200              205
Leu Leu Ile Ile Ser Ser Phe Phe Lys Glu Gln Gln Ser Leu Gln Arg
    210              215              220
Phe Gln Lys Tyr Phe Asn Val His Glu Leu Glu Ala Leu Leu Gln Glu
225              230              235              240
Met Ser Ser Lys Leu Lys Ser Ala Gln Gln Glu Ser Leu Pro Tyr Asn
            245              250              255
Met Glu Lys Val Leu Asp Lys Val Phe Arg Ala Ser Glu Ser Gln Ile
            260              265              270
Leu Ser Ile Ala Glu Lys Met Leu Asp Thr Arg Val Ala Glu Asn Arg
        275              280              285
Asp Leu Gly Met Asn Glu Asn Asn Ile Phe Glu Glu Ala Ala Val Leu
    290              295              300
Asp Asp Ile Gln Asp Leu Ile Tyr Phe Val Arg Tyr Lys His Ser Thr
305              310              315              320
Ala Glu Glu Thr Ala Thr Leu Val Met Ala Pro Pro Leu Glu Glu Gly
            325              330              335
Leu Gly Gly Ala Met Glu Glu Met Gln Pro Leu His Glu Asp Asn Phe
        340              345              350
Ser Arg Glu Lys Thr Ala Glu Leu Asn Val Gln Val Pro Glu Glu Pro
        355              360              365
Thr His Leu Asp Gln Arg Val Ile Gly Asp Thr His Ala Ser Glu Val
```

644

```
            370                    375                    380
Ser Gln Lys Pro Asn Thr Glu Lys Asp Leu Asp Pro Gly Pro Val Thr
385                    390                    395                    400
Thr Glu Asp Thr Pro Met Asp Ala Ile Asp Ala Asn Lys Gln Pro Glu
                       405                    410                    415
Thr Ala Ala Glu Glu Pro Ala Ser Val Thr Pro Leu Glu Asn Ala Ile
             420                    425                    430
Leu Leu Ile Tyr Ser Phe Met Phe Tyr Leu Thr Lys Ser Leu Val Ala
             435                    440                    445
Thr Leu Pro Asp Asp Val Gln Pro Gly Pro Asp Phe Tyr Gly Leu Pro
       450                    455                    460
Trp Lys Pro Val Phe Ile Thr Ala Phe Leu Gly Ile Ala Ser Phe Ala
465                    470                    475                    480
Ile Phe Leu Trp Arg Thr Val Leu Val Val Lys Asp Arg Val Tyr Gln
                 485                    490                    495
Val Thr Glu Gln Gln Ile Ser Glu Lys Leu Lys Thr Ile Met Lys Glu
             500                    505                    510
Asn Thr Glu Leu Val Gln Lys Leu Ser Asn Tyr Glu Gln Lys Ile Lys
       515                    520                    525
Glu Ser Lys Lys His Val Gln Glu Thr Arg Lys Gln Asn Met Ile Leu
       530                    535                    540
Ser Asp Glu Ala Ile Lys Tyr Lys Asp Lys Ile Lys Thr Leu Glu Lys
545                    550                    555                    560
Asn Gln Glu Ile Leu Asp Asp Thr Ala Lys Asn Leu Arg Val Met Leu
             565                    570                    575
Glu Ser Glu Arg Glu Gln Asn Val Lys Asn Gln Asp Leu Ile Ser Glu
       580                    585                    590
Asn Lys Lys Ser Ile Glu Lys Leu Lys Asp Val Ile Ser Met Asn Ala
       595                    600                    605
Ser Glu Phe Ser Glu Val Gln Ile Ala Leu Asn Glu Ala Lys Leu Ser
       610                    615                    620
Glu Glu Lys Val Lys Ser Glu Cys His Arg Val Gln Glu Glu Asn Ala
625                    630                    635                    640
Arg Leu Lys Lys Lys Lys Glu Gln Leu Gln Gln Glu Ile Glu Asp Trp
                 645                    650                    655
Ser Lys Leu His Ala Glu Leu Ser Glu Gln Ile Lys Ser Phe Glu Lys
             660                    665                    670
Ser Gln Lys Asp Leu Glu Val Ala Leu Thr His Lys Asp Asp Asn Ile
       675                    680                    685
Asn Ala Leu Thr Asn Cys Ile Thr Gln Leu Asn Leu Leu Glu Cys Glu
       690                    695                    700
Ser Glu Ser Glu Gly Gln Asn Lys Gly Gly Asn Asp Ser Asp Glu Leu
705                    710                    715                    720
Ala Asn Gly Glu Val Gly Gly Asp Arg Asn Glu Lys Met Lys Asn Gln
                 725                    730                    735
Ile Lys Gln Met Met Asp Val Ser Arg Thr Gln Thr Ala Ile Ser Val
             740                    745                    750
Val Glu Glu Asp Leu Lys Leu Leu Gln Leu Lys Leu Arg Ala Ser Val
             755                    760                    765
Ser Thr Lys Cys Asn Leu Glu Asp Gln Val Lys Lys Leu Glu Asp Asp
       770                    775                    780
Arg Asn Ser Leu Gln Ala Ala Lys Ala Gly Leu Glu Asp Glu Cys Lys
785                    790                    795                    800
Thr Leu Arg Gln Lys Val Glu Ile Leu Asn Glu Leu Tyr Gln Gln Lys
                 805                    810                    815
Glu Met Ala Leu Gln Lys Lys Leu Ser Gln Glu Glu Tyr Glu Arg Gln
             820                    825                    830
Glu Arg Glu His Arg Leu Ser Ala Ala Asp Glu Lys Ala Val Ser Ala
       835                    840                    845
Ala Glu Glu Val Lys Thr Tyr Lys Arg Arg Ile Glu Glu Met Glu Asp
       850                    855                    860
Glu Leu Gln Lys Thr Glu Arg Ser Phe Lys Asn Gln Ile Ala Thr His
865                    870                    875                    880
Glu Lys Lys Ala His Glu Asn Trp Leu Lys Ala Arg Ala Ala Glu Arg
```

645

```
                  885                    890                    895
Ala Ile Ala Glu Glu Lys Arg Glu Ala Ala Asn Leu Arg His Lys Leu
              900                    905                    910
Leu Asp Leu Thr Gln Lys Met Ala Met Leu Gln Glu Glu Pro Val Ile
              915                    920                    925
Val Lys Pro Met Pro Gly Lys Pro Asn Thr Gln Asn Pro Pro Arg Arg
930                    935                    940
Gly Pro Leu Ser Gln Asn Gly Ser Phe Gly Pro Ser Pro Val Ser Gly
945                    950                    955                    960
Gly Glu Cys Ser Pro Pro Leu Thr Val Glu Pro Pro Val Arg Pro Leu
              965                    970                    975
Ser Ala Thr Leu Asn Arg Arg Asp Met Pro Arg Ser Glu Phe Gly Ser
              980                    985                    990
Leu Asp Gly Pro Leu Pro His Pro Arg Trp Ser Ala Glu Ala Ser Gly
              995                   1000                   1005
Lys Pro Ser Pro Ser Asp Pro Gly Ser Gly Thr Ala Thr Met Met Asn
         1010                   1015                   1020
Ser Ser Ser Arg Gly Ser Ser Pro Thr Arg Val Leu Asp Glu Gly Lys
1025                   1030                   1035                   1040
Val Asn Met Ala Pro Lys Gly Pro Pro Pro Phe Pro Gly Val Pro Leu
                   1045                   1050                   1055
Met Ser Thr Pro Met Gly Gly Pro Val Pro Pro Pro Ile Arg Tyr Gly
              1060                   1065                   1070
Pro Pro Pro Gln Leu Cys Gly Pro Phe Gly Pro Arg Pro Leu Pro Pro
         1075                   1080                   1085
Pro Phe Gly Pro Gly Met Arg Pro Pro Leu Gly Leu Arg Glu Phe Ala
    1090                   1095                   1100
Pro Gly Val Pro Pro Gly Arg Arg Asp Leu Pro Leu His Pro Arg Gly
1105                   1110                   1115                   1120
Phe Leu Pro Gly His Ala Pro Phe Arg Pro Leu Gly Ser Leu Gly Pro
              1125                   1130                   1135
Arg Glu Tyr Phe Ile Pro Gly Thr Arg Leu Pro Pro Pro Thr His Gly
         1140                   1145                   1150
Pro Gln Glu Tyr Pro Pro Pro Pro Ala Val Arg Asp Leu Leu Pro Ser
         1155                   1160                   1165
Gly Ser Arg Asp Glu Pro Pro Pro Ala Ser Gln Ser Thr Ser Gln Asp
    1170                   1175                   1180
Cys Ser Gln Ala Leu Lys Gln Ser Pro
1185                   1190         1193
```

```
         <210> 1118
         <211> 981
         <212> Amino acid
         <213> Homo sapiens
```

```
         <400> 1118
Met Ala Ala Asp Ser Glu Pro Glu Ser Glu Val Phe Glu Ile Thr Asp
1                 5                   10                   15
Phe Thr Thr Ala Ser Glu Trp Glu Arg Phe Ile Ser Lys Val Glu Glu
              20                   25                   30
Val Leu Asn Asp Trp Lys Leu Ile Gly Asn Ser Leu Gly Lys Pro Leu
         35                   40                   45
Glu Lys Gly Ile Phe Thr Ser Gly Thr Trp Glu Glu Lys Ser Asp Glu
    50                   55                   60
Ile Ser Phe Ala Asp Phe Lys Phe Ser Val Thr His His Tyr Leu Val
65                   70                   75                   80
Gln Glu Ser Thr Asp Lys Glu Gly Lys Asp Glu Leu Leu Glu Asp Val
              85                   90                   95
Val Pro Gln Ser Met Gln Asp Leu Leu Gly Met Asn Asn Asp Phe Pro
```

646

```
                    100                     105                     110
Pro Arg Ala His Cys Leu Val Arg Trp Tyr Gly Leu Arg Glu Phe Val
        115                     120                     125
Val Ile Ala Pro Ala Ala His Ser Asp Ala Val Leu Ser Glu Ser Lys
    130                     135                     140
Cys Asn Leu Leu Leu Ser Ser Val Ser Ile Ala Leu Gly Asn Thr Gly
145                     150                     155                     160
Cys Gln Val Pro Leu Phe Val Gln Ile His His Lys Trp Arg Arg Met
                165                     170                     175
Tyr Val Gly Glu Cys Gln Gly Pro Gly Val Arg Thr Asp Phe Glu Met
            180                     185                     190
Val His Leu Arg Lys Val Pro Asn Gln Tyr Thr His Leu Ser Gly Leu
        195                     200                     205
Leu Asp Ile Phe Lys Ser Lys Ile Gly Cys Pro Leu Thr Pro Leu Pro
    210                     215                     220
Pro Val Ser Ile Ala Ile Arg Phe Thr Tyr Val Leu Gln Asp Trp Gln
225                     230                     235                     240
Gln Tyr Phe Trp Pro Gln Gln Pro Pro Asp Ile Asp Ala Leu Val Gly
                245                     250                     255
Gly Glu Val Gly Gly Leu Glu Phe Gly Lys Leu Pro Phe Gly Ala Cys
            260                     265                     270
Glu Asp Pro Ile Ser Glu Leu His Leu Ala Thr Thr Trp Pro His Leu
        275                     280                     285
Thr Glu Gly Ile Ile Val Asp Asn Asp Val Tyr Ser Asp Leu Asp Pro
    290                     295                     300
Ile Gln Ala Pro His Trp Ser Val Arg Val Arg Lys Ala Glu Asn Pro
305                     310                     315                     320
Gln Cys Leu Leu Gly Asp Phe Val Thr Glu Phe Phe Lys Ile Cys Arg
                325                     330                     335
Arg Lys Glu Ser Thr Asp Glu Ile Leu Gly Arg Ser Ala Phe Glu Glu
            340                     345                     350
Glu Gly Lys Glu Thr Ala Asp Ile Thr His Ala Leu Ser Lys Leu Thr
        355                     360                     365
Glu Pro Ala Ser Val Pro Ile His Lys Leu Ser Val Ser Asn Met Val
    370                     375                     380
His Thr Ala Lys Lys Lys Ile Arg Lys His Arg Gly Val Glu Glu Ser
385                     390                     395                     400
Pro Leu Asn Asn Asp Val Leu Asn Thr Ile Leu Leu Phe Leu Phe Pro
                405                     410                     415
Asp Ala Val Ser Glu Lys Pro Leu Asp Gly Thr Thr Ser Thr Asp Asn
            420                     425                     430
Asn Asn Pro Pro Ser Glu Ser Glu Asp Tyr Asn Leu Tyr Asn Gln Phe
        435                     440                     445
Lys Ser Ala Pro Ser Asp Ser Leu Thr Tyr Lys Leu Ala Leu Cys Leu
    450                     455                     460
Cys Met Ile Asn Phe Tyr His Gly Gly Leu Lys Gly Val Ala His Leu
465                     470                     475                     480
Trp Gln Glu Phe Val Leu Glu Met Arg Phe Arg Trp Glu Asn Asn Phe
                485                     490                     495
Leu Ile Pro Gly Leu Ala Ser Gly Pro Pro Asp Leu Arg Cys Cys Leu
            500                     505                     510
Leu His Gln Lys Leu Gln Met Leu Asn Cys Cys Ile Glu Arg Lys Lys
        515                     520                     525
Ala Arg Asp Glu Gly Lys Lys Thr Ser Ala Ser Asp Val Thr Asn Ile
    530                     535                     540
Tyr Pro Gly Asp Ala Gly Lys Ala Gly Asp Gln Leu Val Pro Asp Asn
545                     550                     555                     560
Leu Lys Glu Thr Asp Lys Glu Lys Gly Glu Val Gly Lys Ser Trp Asp
                565                     570                     575
Ser Trp Ser Asp Ser Glu Glu Glu Phe Phe Glu Cys Leu Ser Asp Thr
            580                     585                     590
Glu Glu Leu Lys Gly Asn Gly Gln Glu Ser Gly Lys Lys Gly Gly Pro
        595                     600                     605
Lys Glu Met Ala Asn Leu Arg Pro Glu Gly Arg Leu Tyr Gln His Gly
```

647

```
        610                    615                    620
Lys Leu Thr Leu Leu His Asn Gly Glu Pro Leu Tyr Ile Pro Val Thr
625                    630                    635                    640
Gln Glu Pro Ala Pro Met Thr Glu Asp Leu Leu Glu Glu Gln Ser Glu
                  645                    650                    655
Val Leu Ala Lys Leu Gly Thr Ser Ala Glu Gly Ala His Leu Arg Ala
              660                    665                    670
Arg Met Gln Ser Ala Cys Leu Leu Ser Asp Met Glu Ser Phe Lys Ala
          675                    680                    685
Ala Asn Pro Gly Cys Ser Leu Glu Asp Phe Val Arg Trp Tyr Ser Pro
      690                    695                    700
Arg Asp Tyr Ile Glu Glu Glu Val Ile Asp Glu Lys Gly Asn Val Val
705                    710                    715                    720
Leu Lys Gly Glu Leu Ser Ala Arg Met Lys Ile Pro Ser Asn Met Trp
                  725                    730                    735
Val Glu Ala Trp Glu Thr Ala Lys Pro Ile Pro Ala Arg Arg Gln Arg
              740                    745                    750
Arg Leu Phe Asp Asp Thr Arg Glu Ala Glu Lys Val Leu His Tyr Leu
          755                    760                    765
Ala Ile Gln Lys Pro Ala Asp Leu Ala Arg His Leu Leu Pro Cys Val
      770                    775                    780
Ile His Ala Ala Val Leu Lys Val Lys Glu Glu Glu Ser Leu Glu Asn
785                    790                    795                    800
Ile Ser Ser Val Lys Lys Ile Ile Lys Gln Ile Ile Ser His Ser Ser
                  805                    810                    815
Lys Val Leu His Phe Pro Asn Pro Glu Asp Lys Lys Leu Glu Glu Ile
              820                    825                    830
Ile His Gln Ile Thr Asn Val Glu Ala Leu Ile Ala Arg Ala Arg Ser
          835                    840                    845
Leu Lys Ala Lys Phe Gly Thr Glu Lys Cys Glu Gln Glu Glu Glu Lys
      850                    855                    860
Glu Asp Leu Glu Arg Phe Val Ser Cys Leu Leu Glu Gln Pro Glu Val
865                    870                    875                    880
Leu Val Thr Gly Ala Gly Arg Gly His Ala Gly Arg Ile Ile His Lys
                  885                    890                    895
Leu Phe Val Asn Ala Gln Arg Ala Ala Ala Met Thr Pro Pro Glu Glu
              900                    905                    910
Glu Leu Lys Arg Met Gly Ser Pro Glu Glu Arg Arg Gln Asn Ser Val
          915                    920                    925
Ser Asp Phe Pro Pro Pro Ala Gly Arg Glu Phe Ile Leu Arg Thr Thr
      930                    935                    940
Val Pro Arg Pro Ala Pro Tyr Ser Lys Ala Leu Pro Gln Arg Met Tyr
945                    950                    955                    960
Ser Val Leu Thr Lys Glu Asp Phe Arg Leu Ala Gly Ala Phe Ser Ser
                  965                    970                    975
Asp Thr Ser Phe Phe
              980 981
```

```
        <210> 1119
        <211> 554
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1119
Ser Pro Thr Arg Thr Gly Asp Arg Ser Val Ser Leu Ile Val Phe Leu
  1               5                    10                    15
Thr Glu Gly Lys Pro Thr Val Gly Glu Thr His Thr Leu Lys Ile Leu
              20                    25                    30
Asn Asn Thr Arg Glu Ala Ala Arg Gly Gln Val Cys Ile Phe Thr Ile
```

```
                 35                      40                      45
Gly Ile Gly Asn Asp Val Asp Phe Arg Leu Leu Glu Lys Leu Ser Leu
          50                      55                      60
Glu Asn Cys Gly Leu Thr Arg Arg Val His Glu Glu Asp Ala Gly
 65                      70                      75                      80
Ser Gln Leu Ile Gly Phe Tyr Asp Glu Ile Arg Thr Pro Leu Leu Ser
                   85                      90                      95
Asp Ile Arg Ile Asp Tyr Pro Pro Ser Ser Val Val Gln Ala Thr Lys
              100                     105                     110
Thr Leu Phe Pro Asn Tyr Phe Asn Gly Ser Glu Ile Ile Ile Ala Gly
              115                     120                     125
Lys Leu Val Asp Arg Lys Leu Asp His Leu His Val Glu Val Thr Ala
         130                     135                     140
Ser Asn Ser Lys Lys Phe Ile Ile Leu Lys Thr Asp Val Pro Val Arg
145                     150                     155                     160
Pro Gln Lys Ala Gly Lys Asp Val Thr Gly Ser Pro Arg Pro Gly Gly
              165                     170                     175
Asp Gly Glu Gly Asp Thr Asn His Ile Glu Arg Leu Trp Ser Tyr Leu
         180                     185                     190
Thr Thr Lys Glu Leu Leu Ser Ser Trp Leu Gln Ser Asp Asp Glu Pro
         195                     200                     205
Glu Lys Glu Arg Leu Arg Gln Arg Ala Gln Ala Leu Ala Val Ser Tyr
    210                     215                     220
Arg Phe Leu Thr Pro Phe Thr Ser Met Lys Leu Arg Gly Pro Val Pro
225                     230                     235                     240
Arg Met Asp Gly Leu Glu Glu Ala His Gly Met Ser Ala Ala Met Gly
              245                     250                     255
Pro Glu Pro Val Val Gln Ser Val Arg Gly Ala Gly Thr Gln Pro Gly
              260                     265                     270
Pro Leu Leu Lys Lys Pro Tyr Gln Pro Arg Ile Lys Ile Ser Lys Thr
         275                     280                     285
Ser Val Asp Gly Asp Pro His Phe Val Val Asp Phe Pro Leu Ser Arg
    290                     295                     300
Leu Thr Val Cys Phe Asn Ile Asp Gly Gln Pro Gly Asp Ile Leu Arg
305                     310                     315                     320
Leu Val Ser Asp His Arg Asp Ser Gly Val Thr Val Asn Gly Glu Leu
              325                     330                     335
Ile Gly Ala Pro Ala Pro Pro Asn Gly His Lys Lys Gln Arg Thr Tyr
              340                     345                     350
Leu Arg Thr Ile Thr Ile Leu Ile Asn Lys Pro Glu Arg Ser Tyr Leu
         355                     360                     365
Glu Ile Thr Pro Ser Arg Val Ile Leu Asp Gly Gly Asp Arg Leu Val
    370                     375                     380
Leu Pro Cys Asn Gln Ser Val Val Val Gly Ser Trp Gly Leu Glu Val
385                     390                     395                     400
Ser Val Ser Ala Asn Ala Asn Val Thr Val Thr Ile Gln Gly Ser Ile
              405                     410                     415
Ala Phe Val Ile Leu Ile His Leu Tyr Lys Lys Pro Ala Pro Phe Gln
              420                     425                     430
Arg His His Leu Gly Phe Tyr Ile Ala Asn Ser Glu Gly Leu Ser Ser
         435                     440                     445
Asn Cys His Gly Leu Leu Gly Gln Phe Leu Asn Gln Asp Ala Arg Leu
    450                     455                     460
Thr Glu Asp Pro Ala Gly Pro Ser Gln Asn Leu Thr His Pro Leu Leu
465                     470                     475                     480
Leu Gln Val Gly Glu Gly Pro Glu Ala Val Leu Thr Val Lys Gly His
              485                     490                     495
Gln Val Pro Val Val Trp Lys Gln Arg Lys Ile Tyr Asn Gly Glu Glu
         500                     505                     510
Gln Ile Asp Cys Trp Phe Ala Arg Asn Asn Ala Ala Lys Leu Ile Asp
         515                     520                     525
Gly Glu Tyr Lys Asp Tyr Leu Ala Ser His Pro Phe Asp Thr Gly Met
    530                     535                     540
Thr Leu Gly Gln Gly Met Ser Arg Glu Leu
```

```
545                  550              554
```

```
        <210> 1120
        <211> 107
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1120
Val Pro Leu Glu Ser Leu Ser Cys Ser His Ala Asp Asn Trp Lys Gln
1               5                   10                  15
Glu Leu Thr Lys Phe Ile Ser Pro Asp Gln Leu Pro Val Glu Phe Gly
            20                  25                  30
Gly Thr Met Thr Asp Pro Asp Gly Asn Pro Lys Cys Leu Thr Lys Ile
            35                  40                  45
Asn Tyr Gly Gly Glu Val Pro Lys Ser Tyr Tyr Leu Cys Lys Gln Val
        50                  55                  60
Arg Leu Gln Tyr Glu His Thr Arg Ser Val Gly Arg Gly Ser Ser Leu
65                  70                  75                  80
Gln Val Glu Asn Glu Ile Leu Phe Pro Gly Cys Val Leu Arg Cys Pro
                85                  90                  95
Glu Val Leu Gln His Leu Gln Pro Gly Ser Phe
            100                 105     107
```

```
        <210> 1121
        <211> 1241
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1121
Pro Ala Ala Pro Glu His Thr Asp Pro Ser Glu Pro Arg Gly Ser Val
1               5                   10                  15
Ser Cys Cys Ser Leu Leu Arg Gly Leu Ser Ser Gly Trp Ser Ser Pro
            20                  25                  30
Leu Leu Pro Ala Pro Val Cys Asn Pro Asn Lys Ala Ile Phe Thr Val
            35                  40                  45
Asp Ala Lys Thr Thr Glu Ile Leu Val Ala Asn Asp Lys Ala Cys Gly
        50                  55                  60
Leu Leu Gly Tyr Ser Ser Gln Asp Leu Ile Gly Gln Lys Leu Thr Gln
65                  70                  75                  80
Phe Phe Leu Arg Ser Asp Ser Asp Val Val Glu Ala Leu Ser Glu Glu
                85                  90                  95
His Met Glu Ala Asp Gly His Ala Ala Val Val Phe Gly Thr Val Val
            100                 105                 110
Asp Ile Ile Ser Arg Ser Gly Glu Lys Ile Pro Val Ser Val Trp Met
            115                 120                 125
Lys Arg Met Arg Gln Glu Arg Arg Leu Cys Cys Val Val Val Leu Glu
            130                 135                 140
Pro Val Glu Arg Val Ser Thr Trp Val Ala Phe Gln Ser Asp Gly Thr
145                 150                 155                 160
Val Thr Ser Cys Asp Ser Leu Phe Ala His Leu His Gly Tyr Val Ser
                165                 170                 175
Gly Glu Asp Val Ala Gly Gln His Ile Thr Asp Leu Ile Pro Ser Val
            180                 185                 190
Gln Leu Pro Pro Ser Gly Gln His Ile Pro Lys Asn Leu Lys Ile Gln
```

```
              195                    200                    205
Arg Ser Val Gly Arg Ala Arg Asp Gly Thr Thr Phe Pro Leu Ser Leu
         210                    215                    220
Lys Leu Lys Ser Gln Pro Ser Ser Glu Glu Ala Thr Thr Gly Glu Ala
225                    230                    235                    240
Ala Pro Val Ser Gly Tyr Arg Ala Ser Val Trp Val Phe Cys Thr Ile
              245                    250                    255
Ser Gly Leu Ile Thr Leu Leu Pro Asp Gly Thr Ile His Gly Ile Asn
         260                    265                    270
His Ser Phe Ala Leu Thr Leu Phe Gly Tyr Gly Lys Thr Glu Leu Leu
         275                    280                    285
Gly Lys Asn Ile Thr Phe Leu Ile Pro Gly Phe Tyr Ser Tyr Met Asp
         290                    295                    300
Leu Ala Tyr Asn Ser Ser Leu Gln Leu Pro Asp Leu Ala Ser Cys Leu
305                    310                    315                    320
Asp Val Gly Asn Glu Ser Gly Cys Gly Glu Arg Thr Leu Asp Pro Trp
              325                    330                    335
Gln Gly Gln Asp Pro Ala Glu Gly Gly Gln Asp Pro Arg Ile Asn Val
         340                    345                    350
Val Leu Ala Gly Gly His Val Val Pro Arg Asp Glu Ile Arg Lys Leu
         355                    360                    365
Met Glu Ser Gln Asp Ile Phe Thr Gly Thr Gln Thr Glu Leu Ile Ala
         370                    375                    380
Gly Gly Gln Leu Leu Ser Cys Leu Ser Pro Gln Pro Ala Pro Gly Val
385                    390                    395                    400
Asp Asn Val Pro Glu Gly Ser Leu Pro Val His Gly Glu Gln Ala Leu
              405                    410                    415
Pro Lys Asp Gln Gln Ile Thr Ala Leu Gly Arg Glu Glu Pro Val Ala
         420                    425                    430
Ile Glu Ser Pro Gly Gln Asp Leu Leu Gly Glu Ser Arg Ser Glu Pro
         435                    440                    445
Val Asp Val Lys Pro Phe Ala Ser Cys Glu Asp Ser Glu Ala Pro Val
         450                    455                    460
Pro Ala Glu Asp Gly Gly Ser Asp Ala Gly Met Cys Gly Leu Cys Gln
465                    470                    475                    480
Lys Ala Gln Leu Glu Arg Met Gly Val Ser Gly Pro Ser Gly Ser Asp
              485                    490                    495
Leu Trp Ala Gly Ala Ala Val Ala Lys Pro Gln Ala Lys Gly Gln Leu
         500                    505                    510
Ala Gly Gly Ser Leu Leu Met His Cys Pro Cys Tyr Gly Ser Glu Trp
         515                    520                    525
Gly Leu Trp Trp Arg Ser Gln Asp Leu Ala Pro Ser Pro Ser Gly Met
         530                    535                    540
Ala Gly Leu Ser Phe Gly Thr Pro Thr Leu Asp Glu Pro Trp Leu Gly
545                    550                    555                    560
Val Glu Asn Asp Arg Glu Glu Leu Gln Thr Cys Leu Ile Lys Glu Gln
              565                    570                    575
Leu Ser Gln Leu Ser Leu Ala Gly Ala Leu Asp Val Pro His Ala Glu
         580                    585                    590
Leu Val Pro Thr Glu Cys Gln Ala Val Thr Ala Pro Val Ser Ser Cys
         595                    600                    605
Asp Leu Gly Gly Arg Asp Leu Cys Gly Gly Cys Thr Gly Ser Ser Ser
         610                    615                    620
Ala Cys Tyr Ala Leu Ala Thr Asp Leu Pro Gly Gly Leu Glu Ala Val
625                    630                    635                    640
Glu Ala Gln Glu Val Asp Val Asn Ser Phe Ser Trp Asn Leu Lys Glu
              645                    650                    655
Leu Phe Phe Ser Asp Gln Thr Asp Gln Thr Ser Ser Asn Cys Ser Cys
         660                    665                    670
Ala Thr Ser Glu Leu Arg Glu Thr Pro Ser Ser Leu Ala Val Gly Ser
         675                    680                    685
Asp Pro Asp Val Gly Ser Leu Gln Glu Gln Gly Ser Cys Val Leu Asp
         690                    695                    700
Asp Arg Glu Leu Leu Leu Leu Thr Gly Thr Cys Val Asp Leu Gly Gln
```

651

```
705                 710                 715                 720
Gly Arg Arg Phe Arg Glu Ser Cys Val Gly His Asp Pro Thr Glu Pro
                725                 730                 735
Leu Glu Val Cys Leu Val Ser Ser Glu His Tyr Ala Ala Ser Asp Arg
                740                 745                 750
Glu Ser Pro Gly His Val Pro Ser Thr Leu Asp Ala Gly Pro Glu Asp
                755                 760                 765
Thr Cys Pro Ser Ala Glu Glu Pro Arg Leu Asn Val Gln Val Thr Ser
        770                 775                 780
Thr Pro Val Ile Val Met Arg Gly Ala Ala Gly Leu Gln Arg Glu Ile
785                 790                 795                 800
Gln Glu Gly Ala Tyr Ser Gly Ser Cys Tyr His Arg Asp Gly Leu Arg
                805                 810                 815
Leu Ser Ile Gln Phe Glu Val Arg Arg Val Glu Leu Gln Gly Pro Thr
                820                 825                 830
Pro Leu Phe Cys Cys Trp Leu Val Lys Asp Leu Leu His Ser Gln Arg
        835                 840                 845
Asp Ser Ala Ala Arg Thr Arg Leu Phe Leu Ala Ser Leu Pro Gly Ser
        850                 855                 860
Thr His Ser Thr Ala Ala Glu Leu Thr Gly Pro Ser Leu Val Glu Val
865                 870                 875                 880
Leu Arg Ala Arg Pro Trp Phe Glu Glu Pro Pro Lys Ala Val Glu Leu
                885                 890                 895
Glu Gly Leu Ala Ala Cys Glu Gly Glu Tyr Ser Gln Lys Tyr Ser Thr
                900                 905                 910
Met Ser Pro Leu Gly Ser Gly Ala Phe Gly Phe Val Trp Thr Ala Val
        915                 920                 925
Asp Lys Glu Lys Asn Lys Glu Val Val Val Lys Phe Ile Lys Lys Glu
        930                 935                 940
Lys Val Leu Glu Asp Cys Trp Ile Glu Asp Pro Lys Leu Gly Lys Val
945                 950                 955                 960
Thr Leu Glu Ile Ala Ile Leu Ser Arg Val Glu His Ala Asn Ile Ile
                965                 970                 975
Lys Val Leu Asp Ile Phe Glu Asn Gln Gly Phe Phe Gln Leu Val Met
        980                 985                 990
Glu Lys His Gly Ser Gly Leu Asp Leu Phe Ala Phe Ile Asp Arg His
        995                 1000                1005
Pro Arg Leu Asp Glu Pro Leu Ala Ser Tyr Ile Phe Arg Gln Val Arg
    1010                1015                1020
Ala Gly Gln Ser Arg Leu Val Ser Ala Val Gly Tyr Leu Arg Leu Lys
1025                1030                1035                1040
Asp Ile Ile His Arg Asp Ile Lys Asp Glu Asn Ile Val Ile Ala Glu
                1045                1050                1055
Asp Phe Thr Ile Lys Leu Ile Asp Phe Gly Ser Ala Ala Tyr Leu Glu
        1060                1065                1070
Arg Gly Lys Leu Phe Tyr Thr Phe Cys Gly Thr Ile Glu Tyr Cys Ala
        1075                1080                1085
Pro Glu Val Leu Met Gly Asn Pro Tyr Arg Gly Pro Glu Leu Glu Met
        1090                1095                1100
Trp Ser Leu Gly Val Thr Leu Tyr Thr Leu Val Phe Glu Glu Asn Pro
1105                1110                1115                1120
Phe Cys Glu Leu Glu Glu Thr Val Glu Ala Ala Ile His Pro Pro Tyr
                1125                1130                1135
Leu Val Ser Lys Glu Leu Met Ser Leu Val Ser Gly Leu Leu Gln Pro
        1140                1145                1150
Val Pro Glu Arg Arg Thr Thr Leu Glu Lys Leu Val Thr Asp Pro Trp
        1155                1160                1165
Val Thr Gln Pro Val Asn Leu Ala Asp Tyr Thr Trp Glu Glu Val Phe
        1170                1175                1180
Arg Val Asn Lys Pro Glu Ser Gly Val Leu Ser Ala Ala Ser Leu Glu
1185                1190                1195                1200
Met Gly Asn Arg Ser Leu Ser Asp Val Ala Gln Ala Gln Glu Leu Cys
                1205                1210                1215
Gly Gly Pro Val Pro Gly Glu Ala Pro Asn Gly Gln Gly Cys Leu His
```

652

```
                    1220                    1225                  1230
          Pro Gly Asp Pro Arg Leu Leu Thr Ser
                 1235                    12401241


          <210> 1122
          <211> 395
          <212> Amino acid
          <213> Homo sapiens




          <400> 1122
Pro Gly Thr Ser Ala Ala Thr Cys Arg Phe Leu Ser Pro Pro Val Ile
  1               5                  10                  15
Ser Leu Ser Phe Thr Gly Leu Cys Ile Ser Asp Leu Val Val Ala Val
            20                  25                  30
Asn Gly Val Trp Ile Leu Val Glu Thr Phe Met Leu Lys Gly Gly Asn
            35                  40                  45
Phe Phe Ser Lys His Val Pro Trp Ser Tyr Leu Val Phe Leu Thr Ile
    50                  55                  60
Tyr Gly Val Glu Leu Phe Leu Lys Val Ala Gly Leu Gly Pro Val Glu
65                  70                  75                  80
Tyr Leu Ser Ser Gly Trp Asn Leu Phe Asp Phe Ser Val Thr Val Phe
                85                  90                  95
Ala Phe Leu Gly Leu Leu Ala Leu Ala Leu Asn Met Glu Pro Phe Tyr
            100                 105                 110
Phe Ile Val Val Leu Arg Pro Leu Gln Leu Leu Arg Leu Phe Lys Leu
    115                 120                 125
Lys Glu Arg Tyr Arg Asn Val Leu Asp Thr Met Phe Glu Leu Leu Pro
130                 135                 140
Arg Met Ala Ser Leu Gly Leu Thr Leu Leu Ile Phe Tyr Tyr Ser Phe
145                 150                 155                 160
Ala Ile Val Gly Met Glu Phe Phe Cys Gly Ile Val Phe Pro Asn Cys
                165                 170                 175
Cys Asn Thr Ser Thr Val Ala Asp Ala Tyr Arg Trp Arg Asn His Thr
                180                 185                 190
Val Gly Asn Arg Thr Val Val Glu Glu Gly Tyr Tyr Tyr Leu Asn Asn
            195                 200                 205
Phe Asp Asn Ile Leu Asn Ser Phe Val Thr Leu Phe Glu Leu Thr Val
    210                 215                 220
Val Asn Asn Trp Tyr Ile Ile Met Glu Gly Val Thr Ser Gln Thr Ser
225                 230                 235                 240
His Trp Ser Arg Leu Tyr Phe Met Thr Phe Tyr Ile Val Thr Met Val
                245                 250                 255
Val Met Thr Ile Ile Val Ala Phe Ile Leu Glu Ala Phe Val Phe Arg
            260                 265                 270
Met Asn Tyr Ser Arg Lys Asn Gln Asp Ser Glu Val Asp Gly Gly Ile
            275                 280                 285
Thr Leu Glu Lys Glu Ile Ser Lys Glu Glu Leu Val Ala Val Leu Glu
    290                 295                 300
Leu Tyr Arg Glu Ala Arg Gly Ala Ser Ser Asp Val Thr Arg Leu Leu
305                 310                 315                 320
Glu Thr Leu Ser Gln Met Glu Arg Tyr Gln Gln His Ser Met Val Phe
                325                 330                 335
Leu Gly Arg Arg Ser Arg Thr Lys Ser Asp Leu Ser Leu Lys Met Tyr
            340                 345                 350
Gln Glu Glu Ile Gln Glu Trp Tyr Glu Glu His Ala Arg Glu Gln Glu
            355                 360                 365
Gln Gln Arg Gln Leu Ser Ser Ser Ala Ala Pro Ala Ala Gln Gln Pro
    370                 375                 380
Pro Gly Ser Arg Gln Arg Ser Gln Thr Val Thr
```

653

385   390   395

            <210> 1123
            <211> 328
            <212>Amino acid
            <213> Homo sapiens

            <400> 1123
Leu Ala Gly Val Gly Thr Gln Ala Pro Pro Arg Arg Pro Gly Gly Glu
1   5   10   15
Met Ala Ala Gly Gln Asn Gly His Glu Glu Trp Val Gly Ser Ala Tyr
            20   25   30
Leu Phe Val Glu Ser Ser Leu Asp Lys Val Val Leu Ser Asp Ala Tyr
        35   40   45
Ala His Pro Gln Gln Lys Val Ala Val Tyr Arg Ala Leu Gln Ala Ala
    50   55   60
Leu Ala Glu Ser Gly Gly Ser Pro Asp Val Leu Gln Met Leu Lys Ile
65   70   75   80
His Arg Ser Asp Pro Gln Leu Ile Val Gln Leu Arg Phe Cys Gly Arg
                85   90   95
Gln Pro Cys Gly Arg Phe Leu Arg Ala Tyr Arg Glu Gly Ala Leu Arg
            100   105   110
Ala Ala Leu Gln Arg Ser Leu Ala Ala Ala Leu Ala Gln His Ser Val
        115   120   125
Pro Leu Gln Leu Asp Leu Arg Ala Gly Ala Glu Arg Leu Glu Ala Leu
    130   135   140
Leu Ala Asp Glu Glu Arg Cys Leu Ser Cys Ile Leu Ala Gln Gln Pro
145   150   155   160
Asp Arg Leu Arg Asp Glu Glu Leu Ala Glu Leu Glu Asp Ala Leu Arg
                165   170   175
Asn Leu Lys Cys Gly Ser Gly Ala Arg Gly Gly Asp Gly Glu Val Ala
            180   185   190
Ser Ala Pro Leu Gln Pro Pro Val Pro Ser Leu Ser Glu Val Lys Pro
        195   200   205
Pro Pro Pro Pro Pro Pro Ala Gln Thr Phe Leu Phe Gln Gly Gln Pro
    210   215   220
Val Val Asn Arg Pro Leu Ser Leu Lys Asp Gln Gln Thr Phe Ala Arg
225   230   235   240
Ser Val Gly Leu Lys Trp Arg Lys Val Gly Arg Ser Leu Gln Arg Gly
            245   250   255
Cys Arg Ala Leu Arg Asp Pro Ala Leu Asp Ser Leu Ala Tyr Glu Tyr
            260   265   270
Glu Arg Glu Gly Leu Tyr Glu Gln Ala Phe Gln Leu Leu Arg Arg Phe
        275   280   285
Val Gln Ala Glu Gly Arg Arg Ala Thr Leu Gln Arg Leu Val Glu Ala
    290   295   300
Leu Glu Glu Asn Glu Leu Thr Ser Leu Ala Glu Asp Leu Leu Gly Leu
305   310   315   320
Thr Asp Pro Asn Gly Gly Leu Ala
                325   328

            <210> 1124
            <211> 667
            <212>Amino acid
            <213> Homo sapiens

            <220>
            <221> misc_feature

<222> (1)...(667)
<223> X = any amino acid or stop code

<400> 1124

```
Ser Ser Lys Pro Lys Leu Lys Lys Arg Phe Ser Leu Arg Ser Val Gly
1               5                   10                  15
Arg Ser Val Arg Gly Ser Val Arg Gly Ile Leu Gln Trp Arg Gly Thr
            20                  25                  30
Val Asp Pro Pro Ser Ser Ala Gly Pro Leu Glu Thr Ser Ser Gly Pro
        35                  40                  45
Pro Val Leu Gly Gly Asn Ser Asn Ser Asn Ser Ser Gly Gly Ala Gly
    50                  55                  60
Thr Val Gly Arg Gly Leu Val Ser Asp Gly Thr Ser Pro Gly Glu Arg
65                  70                  75                  80
Trp Thr His Arg Phe Glu Arg Leu Arg Leu Ser Arg Gly Gly Gly Ala
                85                  90                  95
Leu Lys Asp Gly Ala Gly Met Val Gln Arg Glu Glu Leu Leu Ser Phe
            100                 105                 110
Met Gly Ala Glu Glu Ala Ala Pro Asp Pro Ala Gly Val Gly Arg Gly
            115                 120                 125
Gly Gly Val Ala Gly Pro Pro Ser Gly Gly Gly Gln Pro Gln Trp
    130                 135                 140
Gln Lys Cys Arg Leu Leu Leu Arg Ser Glu Gly Glu Gly Gly Gly Gly
145                 150                 155                 160
Ser Arg Leu Glu Phe Phe Val Pro Pro Lys Ala Ser Arg Pro Arg Leu
                165                 170                 175
Ser Ile Pro Cys Ser Ser Ile Thr Asp Val Arg Thr Thr Thr Ala Leu
            180                 185                 190
Glu Met Pro Asp Arg Glu Asn Thr Phe Val Val Lys Val Glu Gly Pro
        195                 200                 205
Ser Glu Tyr Ile Met Glu Thr Val Asp Ala Gln His Val Lys Ala Trp
    210                 215                 220
Val Ser Asp Ile Gln Glu Cys Leu Ser Pro Gly Pro Cys Pro Ala Thr
225                 230                 235                 240
Ser Pro Arg Pro Met Thr Leu Pro Leu Ala Pro Gly Thr Ser Phe Leu
                245                 250                 255
Thr Arg Glu Asn Thr Asp Ser Leu Glu Leu Ser Cys Leu Asn His Ser
            260                 265                 270
Glu Ser Leu Pro Ser Gln Asp Leu Leu Leu Gly Pro Ser Glu Ser Asn
        275                 280                 285
Asp Arg Leu Ser Gln Gly Ala Tyr Gly Gly Leu Ser Asp Arg Pro Ser
    290                 295                 300
Ala Ser Ile Ser Pro Ser Ser Ala Ser Ile Ala Ala Ser His Phe Asp
305                 310                 315                 320
Ser Met Glu Leu Leu Pro Pro Glu Leu Pro Pro Arg Ile Pro Ile Glu
                325                 330                 335
Glu Gly Pro Pro Ala Gly Thr Val His Pro Leu Ser Ala Pro Tyr Pro
        340                 345                 350
Pro Leu Asp Thr Pro Glu Thr Ala Thr Gly Ser Phe Leu Phe Gln Gly
    355                 360                 365
Glu Pro Glu Gly Gly Glu Gly Asp Gln Pro Leu Ser Gly Tyr Pro Trp
370                 375                 380
Phe His Gly Met Leu Ser Arg Leu Lys Ala Ala Gln Leu Val Leu Thr
385                 390                 395                 400
Gly Gly Thr Gly Ser His Gly Val Phe Leu Val Arg Gln Ser Glu Thr
                405                 410                 415
Arg Arg Gly Glu Tyr Val Leu Thr Phe Asn Phe Gln Gly Lys Ala Lys
            420                 425                 430
His Leu Arg Leu Ser Leu Asn Glu Glu Gly Gln Cys Arg Val Gln His
        435                 440                 445
```

655

```
Leu Trp Phe Gln Ser Ile Phe Asp Met Leu Glu His Phe Arg Val His
    450             455             460
Pro Ile Pro Leu Glu Ser Gly Gly Ser Ser Asp Val Val Leu Val Ser
465             470             475             480
Tyr Val Pro Ser Ser Gln Arg Gln Gln Gly Glu Gln Ser Arg Ser Ala
                485             490             495
Gly Glu Glu Val Pro Val His Pro Arg Ser Glu Ala Gly Ser Arg Leu
            500             505             510
Gly Ala Met Arg Gly Cys Ala Arg Glu Met Asp Ala Thr Pro Asn Ala
        515             520             525
Ser Cys Thr Leu Met Pro Phe Gly Ala Ser Asp Cys Glu Pro Thr Thr
    530             535             540
Ser His Asp Pro Pro Gln Pro Pro Glu Pro Pro Ser Trp Thr Asp Pro
545             550             555             560
Pro Gln Pro Gly Glu Glu Glu Ala Ser Arg Ala Pro Gly Ser Gly Gly
            565             570             575
Gln Gln Ala Ala Ala Ala Ala Lys Glu Arg Gln Glu Lys Glu Lys Ala
        580             585             590
Gly Gly Gly Gly Val Pro Glu Glu Leu Val Pro Val Val Xaa Leu Val
    595             600             605
Pro Val Gly Glu Leu Gly Glu Gly His Arg Pro Gln Ala Gln Glu Ala
610             615             620
Gln Gly Arg Leu Gly Pro Gly Gly Asp Ala Gly Val Pro Pro Met Val
625             630             635             640
Gln Leu Gln Gln Ser Pro Leu Gly Gly Asp Gly Glu Glu Gly Gly His
            645             650             655
Pro Arg Ala Ile Asn Asn Gln Tyr Ser Phe Val
            660             665     667
```

```
<210> 1125
<211> 387
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1125
Phe Arg Ala Pro Val Gly Thr Ala Ala Arg Ser Pro Gln Val Val Ile
1               5               10              15
Arg Arg Leu Pro Pro Gly Leu Thr Lys Glu Gln Leu Glu Glu Gln Leu
        20              25              30
Arg Pro Leu Pro Ala His Asp Tyr Phe Glu Phe Phe Ala Ala Asp Leu
    35              40              45
Ser Leu Tyr Pro His Leu Tyr Ser Arg Ala Tyr Ile Asn Phe Arg Asn
    50              55              60
Pro Asp Asp Ile Leu Leu Phe Arg Asp Arg Phe Asp Gly Tyr Ile Phe
65              70              75              80
Leu Asp Ser Lys Asp Pro Glu Tyr Lys Lys Phe Leu Glu Thr Tyr Cys
            85              90              95
Val Glu Glu Glu Lys Thr Ser Ala Asn Pro Glu Thr Leu Leu Gly Glu
            100             105             110
Met Glu Ala Lys Thr Arg Glu Leu Ile Ala Arg Arg Thr Thr Pro Leu
    115             120             125
Leu Glu Tyr Ile Lys Asn Arg Lys Leu Glu Lys Gln Arg Ile Arg Glu
    130             135             140
Glu Lys Arg Glu Glu Arg Arg Arg Glu Leu Glu Lys Lys Arg Leu
145             150             155             160
Arg Glu Glu Glu Lys Arg Arg Arg Arg Glu Glu Glu Arg Cys Lys Lys
            165             170             175
Lys Glu Thr Asp Lys Gln Lys Lys Ile Ala Glu Lys Glu Val Arg Ile
    180             185             190
```

656

```
Lys Leu Leu Lys Lys Pro Glu Lys Gly Glu Glu Pro Thr Thr Glu Lys
        195             200             205
Pro Lys Glu Arg Gly Glu Glu Ile Asp Thr Gly Gly Gly Lys Gln Glu
    210             215             220
Ser Cys Ala Pro Gly Ala Val Val Lys Ala Arg Pro Met Glu Gly Ser
225             230             235             240
Leu Glu Glu Pro Gln Glu Thr Ser His Ser Gly Ser Asp Lys Glu His
            245             250             255
Arg Asp Val Glu Arg Ser Gln Glu Gln Glu Ser Glu Ala Gln Arg Tyr
        260             265             270
His Val Asp Asp Gly Arg Arg His Arg Ala His His Glu Pro Glu Arg
        275             280             285
Leu Ser Arg Arg Ser Glu Asp Glu Gln Arg Trp Gly Lys Gly Pro Gly
    290             295             300
Gln Asp Arg Gly Lys Lys Gly Ser Gln Asp Ser Gly Ala Pro Gly Glu
305             310             315             320
Ala Met Glu Arg Leu Gly Arg Ala Gln Arg Cys Asp Asp Ser Pro Ala
            325             330             335
Pro Arg Lys Glu Arg Leu Ala Asn Lys Asp Arg Pro Ala Leu Gln Leu
        340             345             350
Tyr Asp Pro Gly Ala Arg Phe Arg Ala Arg Glu Cys Gly Gly Asn Arg
        355             360             365
Arg Ile Cys Lys Ala Glu Gly Ser Gly Thr Gly Pro Glu Lys Arg Glu
    370             375             380
Glu Ala Glu
385     387
```

```
<210> 1126
<211> 208
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1126
Gly Val Trp Gly Val Cys Val Ser Gly Leu Leu Gln Val Gly Ser Gln
1           5               10              15
Arg Ala Gln Ala Trp Arg Ala Trp Ser Pro Met Glu Thr Pro Leu Thr
        20              25              30
Gly Thr Phe Leu Trp Pro His Ile Pro Gln Gly Leu Phe Phe Asp Asp
        35              40              45
Ser Tyr Gly Phe Tyr Pro Gly Gln Val Leu Ile Gly Pro Ala Lys Ile
    50              55              60
Phe Ser Ser Val Gln Trp Leu Ser Gly Val Lys Pro Val Leu Ser Thr
65              70              75              80
Lys Ser Lys Phe Arg Val Val Val Glu Glu Val Gln Val Val Glu Leu
            85              90              95
Lys Val Thr Trp Ile Thr Lys Ser Phe Cys Pro Gly Gly Thr Asp Ser
        100             105             110
Val Ser Pro Pro Ser Val Ile Thr Gln Glu Asn Leu Gly Arg Val
    115             120             125
Lys Arg Leu Gly Cys Phe Asp His Ala Gln Arg His Ala Trp Gly Ala
    130             135             140
Leu Ser Val Cys Leu Pro Ser Gln Gly Arg Ala Ser Gln Asp Cys Leu
145             150             155             160
Gly Met Ser Arg Lys Lys Leu Arg Pro Gly Gly Gly Leu Tyr Gly Gln
            165             170             175
Glu Gly Glu Ala Pro Val Glu Glu Ala Gly Cys Ala Asp His Val Met
        180             185             190
Leu Pro Arg His Pro Val Phe Pro Gly Pro Phe His Gly Arg Pro Arg
        195             200             205         208
```

```
<210> 1127
<211> 670
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1127
Phe Arg Asp Ser Ser Pro Cys Ser Ala Phe Glu Phe His Cys Leu Ser
 1               5                  10                  15
Gly Glu Cys Ile His Ser Ser Trp Arg Cys Asp Gly Gly Pro Asp Cys
                20                  25                  30
Lys Asp Lys Ser Asp Glu Glu Asn Cys Ala Val Ala Thr Cys Arg Pro
            35                  40                  45
Asp Glu Phe Gln Cys Ser Asp Gly Asn Cys Ile His Gly Ser Arg Gln
        50                  55                  60
Cys Asp Arg Glu Tyr Asp Cys Lys Asp Met Ser Asp Glu Val Gly Cys
65                  70                  75                  80
Val Asn Val Thr Leu Cys Glu Gly Pro Asn Lys Phe Lys Cys His Ser
                85                  90                  95
Gly Glu Cys Ile Thr Leu Asp Lys Val Cys Asn Met Ala Arg Asp Cys
               100                 105                 110
Arg Asp Trp Ser Asp Glu Pro Ile Lys Glu Cys Gly Thr Asn Glu Cys
           115                 120                 125
Leu Asp Asn Asn Gly Gly Cys Ser His Val Cys Asn Asp Leu Lys Ile
        130                 135                 140
Gly Tyr Glu Cys Leu Cys Pro Asp Gly Phe Gln Leu Val Ala Gln Arg
145                 150                 155                 160
Arg Cys Glu Asp Ile Asp Glu Cys Gln Asp Pro Asp Thr Cys Ser Gln
               165                 170                 175
Leu Cys Val Asn Leu Glu Gly Gly Tyr Lys Cys Gln Cys Glu Glu Gly
            180                 185                 190
Phe Gln Leu Asp Pro His Thr Lys Ala Cys Lys Ala Val Gly Ser Ile
        195                 200                 205
Ala Tyr Leu Phe Phe Thr Asn Arg His Glu Val Arg Lys Met Thr Leu
210                 215                 220
Asp Arg Ser Glu Tyr Thr Ser Leu Ile Pro Asn Leu Arg Asn Val Val
225                 230                 235                 240
Ala Leu Asp Thr Glu Val Ala Ser Asn Arg Ile Tyr Trp Ser Asp Leu
               245                 250                 255
Ser Gln Arg Met Ile Cys Ser Thr Gln Leu Asp Arg Ala His Gly Val
            260                 265                 270
Ser Ser Tyr Asp Thr Val Ile Ser Arg Asp Ile Gln Ala Pro Asp Gly
        275                 280                 285
Leu Ala Val Asp Trp Ile His Ser Asn Ile Tyr Trp Thr Asp Ser Val
        290                 295                 300
Leu Gly Thr Val Ser Val Ala Asp Thr Lys Gly Val Lys Arg Lys Thr
305                 310                 315                 320
Leu Phe Arg Glu Asn Gly Ser Lys Pro Arg Ala Ile Val Val Asp Pro
               325                 330                 335
Val His Gly Phe Met Tyr Trp Thr Asp Trp Gly Thr Pro Ala Lys Ile
            340                 345                 350
Lys Lys Gly Gly Leu Asn Gly Val Asp Ile Tyr Ser Leu Val Thr Glu
        355                 360                 365
Asn Ile Gln Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser Gly Arg
    370                 375                 380
Leu Tyr Trp Val Asp Ser Lys Leu His Ser Ile Ser Ser Ile Asp Val
385                 390                 395                 400
```

```
Asn Gly Gly Asn Arg Lys Thr Ile Leu Glu Asp Glu Lys Arg Leu Ala
              405                 410                 415
His Pro Phe Ser Leu Ala Val Phe Glu Asp Lys Val Phe Trp Thr Asp
              420                 425                 430
Ile Ile Asn Glu Ala Ile Phe Ser Ala Asn Arg Leu Thr Gly Ser Asp
              435                 440                 445
Val Asn Leu Leu Ala Glu Asn Leu Leu Ser Pro Glu Asp Met Val Leu
              450                 455                 460
Phe His Asn Leu Thr Gln Pro Arg Gly Val Asn Trp Cys Glu Arg Thr
465                 470                 475                 480
Thr Leu Ser Asn Gly Gly Cys Gln Tyr Leu Cys Leu Pro Ala Pro Gln
              485                 490                 495
Ile Asn Pro His Ser Pro Lys Phe Thr Cys Ala Cys Pro Asp Gly Met
              500                 505                 510
Leu Leu Ala Arg Asp Met Arg Ser Cys Leu Thr Glu Gly Glu Ala Ala
              515                 520                 525
Val Ala Thr Gln Glu Thr Ser Thr Val Arg Leu Lys Val Ser Ser Thr
              530                 535                 540
Ala Val Arg Thr Gln His Thr Thr Thr Arg Pro Val Pro Asp Thr Ser
545                 550                 555                 560
Arg Leu Pro Gly Ala Thr Pro Gly Leu Thr Thr Val Glu Ile Val Thr
              565                 570                 575
Met Ser His Gln Ala Leu Gly Asp Val Ala Gly Arg Gly Asn Glu Lys
              580                 585                 590
Lys Pro Ser Ser Val Arg Ala Leu Ser Ile Val Leu Pro Ile Val Leu
              595                 600                 605
Leu Val Phe Leu Cys Leu Gly Val Phe Leu Leu Trp Lys Asn Trp Arg
              610                 615                 620
Leu Lys Asn Ile Asn Ser Ile Asn Phe Asp Asn Pro Val Tyr Gln Lys
625                 630                 635                 640
Thr Thr Glu Asp Glu Val His Ile Cys His Asn Gln Asp Gly Tyr Ser
              645                 650                 655
Tyr Pro Ser Arg Gln Met Val Ser Leu Glu Asp Asp Val Ala
              660                 665                 670


    <210> 1128
    <211> 383
    <212> Amino acid
    <213> Homo sapiens




    <400> 1128
Arg Ile Pro Gly Leu Gly Pro Pro Gly Ser Pro Pro Pro Pro His
1               5               10              15
Val Arg Gly Met Pro Gly Cys Pro Cys Pro Gly Cys Gly Met Ala Gly
              20              25              30
Pro Arg Leu Leu Phe Leu Thr Ala Leu Ala Leu Glu Leu Leu Gly Arg
      35              40              45
Ala Gly Gly Ser Gln Pro Ala Leu Arg Ser Arg Gly Thr Ala Thr Ala
      50              55              60
Cys Arg Leu Asp Asn Lys Glu Ser Glu Ser Trp Gly Ala Leu Leu Ser
65              70              75              80
Gly Glu Arg Leu Asp Thr Trp Ile Cys Ser Leu Leu Gly Ser Leu Met
              85              90              95
Val Gly Leu Ser Gly Val Phe Pro Leu Leu Val Ile Pro Leu Glu Met
              100             105             110
Gly Thr Met Leu Arg Ser Glu Ala Gly Ala Trp Arg Leu Lys Gln Leu
      115             120             125
Leu Ser Phe Ala Leu Gly Gly Leu Leu Gly Asn Val Phe Leu His Leu
      130             135             140
```

```
Leu Pro Glu Ala Trp Ala Tyr Thr Cys Ser Ala Ser Pro Gly Gly Glu
145             150                 155                 160
Gly Gln Ser Leu Gln Gln Gln Gln Leu Gly Leu Trp Val Ile Ala
                165             170                 175
Gly Ile Leu Thr Phe Leu Ala Leu Glu Lys Met Phe Leu Asp Ser Lys
                180             185                 190
Glu Glu Gly Thr Ser Gln Ala Pro Asn Lys Asp Pro Thr Ala Ala Ala
        195             200                 205
Ala Ala Leu Asn Gly Gly His Cys Leu Ala Gln Pro Ala Ala Glu Pro
    210                 215                 220
Gly Leu Gly Ala Val Val Arg Ser Ile Lys Val Ser Gly Tyr Leu Asn
225             230                 235                 240
Leu Leu Ala Asn Thr Ile Asp Asn Phe Thr His Gly Leu Ala Val Ala
            245                 250                 255
Ala Ser Phe Leu Val Ser Lys Lys Ile Gly Leu Leu Thr Thr Met Ala
            260                 265                 270
Ile Leu Leu His Glu Ile Pro His Glu Val Gly Asp Phe Ala Ile Leu
        275                 280                 285
Leu Arg Ala Gly Phe Asp Arg Trp Ser Ala Ala Lys Leu Gln Leu Ser
    290                 295                 300
Thr Ala Leu Gly Gly Leu Leu Gly Ala Gly Phe Ala Ile Cys Thr Gln
305                 310                 315                 320
Ser Pro Lys Gly Val Glu Glu Thr Ala Ala Trp Val Leu Pro Phe Thr
                325                 330                 335
Ser Gly Gly Phe Leu Tyr Ile Ala Leu Val Asn Val Leu Pro Asp Leu
            340                 345                 350
Leu Glu Glu Glu Asp Pro Trp Arg Ser Leu Gln Gln Leu Leu Leu Leu
        355                 360                 365
Cys Ala Gly Ile Val Val Met Val Leu Phe Ser Leu Phe Val Asp
370                 375                 380             383
```

```
<210> 1129
<211> 174
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1129
Gly Lys Val Ser Ala Gly Gln Ala Gly Ala Asp Arg Thr Leu Arg Arg
1               5                   10                  15
Ala Pro Glu Pro Arg Phe Ser Gln Glu Pro Thr Gly Asn Ser Ala Tyr
            20                  25                  30
Pro Gln Leu Arg Pro Phe Leu Asp Pro Gln Gly Arg Asp Leu Lys Pro
        35                  40                  45
Ser Ala Leu Val Pro Pro Thr Arg Ser His Thr Gly Arg Arg Pro Trp
    50                  55                  60
Leu His Thr Gln Pro Leu Pro Gly Pro Gln Gly Arg Ala Trp Gly Pro
65                  70                  75                  80
Thr Cys Thr Pro Ala Cys Val Asp Arg Val Leu Glu Ser Glu Glu Gly
                85                  90                  95
Arg Arg Glu Tyr Leu Ala Phe Pro Thr Ser Lys Ser Ser Gly Gln Lys
            100                 105                 110
Gly Arg Lys Glu Leu Leu Lys Gly Asn Gly Arg Arg Ile Asp Tyr Met
    115                 120                 125
Leu His Ala Glu Glu Gly Leu Cys Pro Asp Trp Lys Ala Glu Val Glu
    130                 135                 140
Glu Phe Ser Phe Ile Thr Gln Leu Ser Gly Leu Thr Asp His Leu Pro
145                 150                 155                 160
Val Ala Met Arg Leu Met Val Ser Ser Gly Glu Glu Glu Ala
                165                 170             174
```

```
<210> 1130
<211> 231
<212> Amino acid
<213> Homo sapiens




<400> 1130
Pro Cys Gly Gly Ile Arg Leu Ser Ala Ser Glu Ala Ala Thr Leu Phe
1               5                   10                  15
Gly Tyr Leu Val Val Pro Ala Gly Gly Gly Gly Thr Phe Leu Gly Gly
                20                  25                  30
Phe Phe Val Asn Lys Leu Arg Leu Arg Gly Ser Ala Val Ile Lys Phe
            35                  40                  45
Cys Leu Phe Cys Thr Val Val Ser Leu Leu Gly Ile Leu Val Phe Ser
        50                  55                  60
Leu His Cys Pro Ser Val Pro Met Ala Gly Val Thr Ala Ser Tyr Gly
65                  70                  75                  80
Gly Ser Leu Leu Pro Glu Gly His Leu Asn Leu Thr Ala Pro Cys Asn
                85                  90                  95
Ala Ala Cys Ser Cys Gln Pro Glu His Tyr Ser Pro Val Cys Gly Ser
            100                 105                 110
Asp Gly Leu Met Tyr Phe Ser Leu Cys His Ala Gly Cys Pro Ala Ala
        115                 120                 125
Thr Glu Thr Asn Val Asp Gly Gln Lys Val Ser Gly Ala Ala Ala Tyr
        130                 135                 140
Arg Pro Cys Pro Pro Leu Asp Pro Gly Lys Gly Pro Pro Cys Leu Pro
145                 150                 155                 160
Leu Val Ile Gly Ala Ile Val Gly Leu Pro Arg Cys Thr Glu Thr Val
                165                 170                 175
Ala Val Ser Leu Arg Ile Phe Pro Leu Val Leu Ala Met His Cys Arg
            180                 185                 190
Glu Met His Phe Asn Leu Ser Glu Lys Ala Pro Pro Ser Gly Phe His
        195                 200                 205
Ile Arg Cys Asn Phe Leu Tyr Ile Pro Gln Gln His Ser Cys Thr Asn
        210                 215                 220
Gly Asn Ser Thr Met Cys Pro
225                 230 231



<210> 1131
<211> 234
<212> Amino acid
<213> Homo sapiens




<400> 1131
Leu Leu Arg Lys Val Gly Ala Pro Gly Gly Ala Arg Gly Val Ile Arg
1               5                   10                  15
Leu Leu Asp Trp Phe Glu Arg Pro Asp Gly Phe Leu Leu Val Leu Glu
                20                  25                  30
Arg Pro Glu Pro Ala Gln Asp Leu Phe Asp Phe Ile Thr Glu Arg Gly
            35                  40                  45
Ala Leu Asp Glu Pro Leu Ala Arg Arg Phe Phe Ala Gln Val Leu Ala
        50                  55                  60
Ala Val Arg His Cys His Ser Cys Gly Val Val His Arg Asp Ile Lys
65                  70                  75                  80
```

```
Asp Glu Asn Leu Leu Val Asp Leu Arg Ser Gly Glu Leu Lys Leu Ile
              85                      90                      95
Asp Phe Gly Ser Gly Ala Leu Leu Lys Asp Thr Val Tyr Thr Asp Phe
             100                     105                     110
Asp Gly Thr Arg Val Tyr Ser Pro Pro Glu Trp Ile Arg Tyr His Arg
         115                      120                  125
Tyr His Gly Arg Ser Ala Thr Val Trp Ser Leu Gly Val Leu Leu Tyr
         130                      135                  140
Asp Met Val Cys Gly Asp Ile Pro Phe Glu Gln Asp Glu Glu Ile Leu
145                  150                  155                  160
Arg Gly Arg Leu Leu Phe Arg Arg Arg Val Ser Pro Glu Cys Gln Gln
                 165                  170                  175
Leu Ile Arg Trp Cys Leu Ser Leu Arg Pro Ser Glu Arg Pro Ser Leu
             180                  185                  190
Asp Gln Ile Ala Ala His Pro Trp Met Leu Gly Ala Asp Gly Gly Ala
         195                  200                  205
Pro Glu Ser Cys Asp Leu Arg Leu Cys Thr Leu Asp Pro Asp Asp Val
    210                  215                  220
Ala Ser Thr Thr Ser Ser Ser Glu Ser Leu
225                  230              234
```

```
<210> 1132
<211> 270
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1132
Gly Lys Asn Ser Gln Lys Ala Ser Pro Val Asp Asp Glu Gln Leu Ser
  1               5                  10                      15
Val Cys Leu Ser Gly Phe Leu Asp Glu Val Met Lys Lys Tyr Gly Ser
             20                  25                  30
Leu Val Pro Leu Ser Glu Lys Glu Val Leu Gly Arg Leu Lys Asp Val
         35                  40                  45
Phe Asn Glu Asp Phe Ser Asn Arg Lys Pro Phe Ile Asn Arg Glu Ile
    50                  55                  60
Thr Asn Tyr Arg Ala Arg His Gln Lys Cys Asn Phe Arg Ile Phe Tyr
65                  70                  75                      80
Asn Lys His Met Leu Asp Met Asp Asp Leu Ala Thr Leu Asp Gly Gln
             85                  90                      95
Asn Trp Leu Asn Asp Gln Val Ile Asn Met Tyr Gly Glu Leu Ile Met
             100                 105                 110
Asp Ala Val Pro Asp Lys Val His Phe Phe Asn Ser Phe Phe His Arg
         115                 120                 125
Gln Leu Val Thr Lys Gly Tyr Asn Gly Val Lys Arg Trp Thr Lys Lys
    130                 135                 140
Val Asp Leu Phe Lys Lys Ser Leu Leu Leu Ile Pro Ile His Leu Glu
145                 150                 155                 160
Val His Trp Ser Leu Ile Thr Val Thr Leu Ser Asn Arg Ile Ile Ser
             165                 170                 175
Phe Tyr Asp Ser Gln Gly Ile His Phe Lys Phe Cys Val Glu Asn Ile
             180                 185                 190
Arg Lys Tyr Leu Leu Thr Glu Ala Arg Glu Lys Asn Arg Leu Asn Leu
         195                 200                 205
Gln Gly Trp Gln Thr Ala Val Thr Lys Cys Ile Pro Gln Gln Lys Asn
    210                 215                 220
Asp Ser Asp Cys Gly Val Phe Val Leu Gln Tyr Cys Lys Cys Leu Ala
225                 230                 235                 240
Leu Lys Gln Pro Phe Gln Phe Ser Gln Glu Asp Met Pro Arg Val Arg
             245                 250                 255
```

```
Lys Arg Ile Tyr Lys Glu Leu Cys Glu Cys Arg Leu Met Asp
            260                 265                 270
```

```
<210> 1133
<211> 204
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(204)
<223> X = any amino acid or stop code
```

```
<400> 1133
Pro Pro Gly Gly Xaa Gln Gly Ser Ala Ala Lys His Arg Phe Pro Lys
 1               5                  10                  15
Gly Tyr Arg His Pro Ala Leu Glu Ala Arg Leu Gly Arg Arg Arg Thr
            20                  25                  30
Val Gln Glu Ala Arg Ala Leu Leu Arg Cys Arg Arg Ala Gly Ile Ser
            35                  40                  45
Ala Pro Val Val Phe Phe Val Asp Tyr Ala Ser Asn Cys Leu Tyr Met
    50                  55                  60
Glu Glu Ile Glu Gly Ser Val Thr Val Arg Asp Tyr Ile Gln Ser Thr
65                  70                  75                  80
Met Glu Thr Glu Lys Thr Pro Gln Gly Leu Ser Asn Leu Ala Lys Thr
                85                  90                  95
Ile Gly Gln Val Leu Ala Arg Met His Asp Glu Asp Leu Ile His Gly
            100                 105                 110
Asp Leu Thr Thr Ser Asn Met Leu Leu Lys Pro Pro Leu Glu Gln Leu
            115                 120                 125
Asn Ile Val Leu Ile Asp Phe Gly Leu Ser Phe Ile Ser Ala Leu Pro
    130                 135                 140
Glu Asp Lys Gly Val Asp Leu Tyr Val Leu Glu Lys Ala Phe Leu Ser
145                 150                 155                 160
Thr His Pro Asn Thr Glu Thr Val Phe Glu Ala Phe Leu Lys Ser Tyr
                165                 170                 175
Ser Thr Ser Ser Lys Lys Ala Arg Pro Val Leu Lys Lys Leu Asp Glu
            180                 185                 190
Val Arg Leu Arg Gly Lys Lys Arg Ser Met Val Gly
            195                 200                 204
```

```
<210> 1134
<211> 531
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1134
Arg Ala Cys Val Phe Arg Pro Glu Asp Met Met Gln Gly Glu Ala His
 1               5                  10                  15
Pro Ser Ala Ser Leu Ile Asp Arg Thr Ile Lys Met Arg Lys Glu Thr
            20                  25                  30
Glu Ala Arg Lys Val Val Leu Ala Trp Gly Leu Leu Asn Val Ser Met
            35                  40                  45
Ala Gly Met Ile Tyr Thr Glu Met Thr Gly Lys Leu Ile Ser Ser Tyr
```

```
              50                      55                      60
Tyr Asn Val Thr Tyr Trp Pro Leu Trp Tyr Ile Glu Leu Ala Leu Ala
   65                      70                      75                      80
Ser Leu Phe Ser Leu Asn Ala Leu Phe Asp Phe Trp Arg Tyr Phe Lys
                  85                      90                      95
Tyr Thr Val Ala Pro Thr Ser Leu Val Val Ser Pro Gly Gln Gln Thr
              100                     105                     110
Leu Leu Gly Leu Lys Thr Ala Val Val Gln Thr Thr Pro Pro His Asp
              115                     120                     125
Leu Ala Ala Thr Gln Ile Pro Pro Ala Pro Pro Ser Pro Ser Ile Gln
              130                     135                     140
Gly Gln Ser Val Leu Ser Tyr Ser Pro Ser Arg Ser Pro Ser Thr Ser
   145                     150                     155                     160
Pro Lys Phe Thr Thr Ser Cys Met Thr Gly Tyr Ser Pro Gln Leu Gln
                  165                     170                     175
Gly Leu Ser Ser Gly Gly Ser Gly Ser Tyr Ser Pro Gly Val Thr Tyr
              180                     185                     190
Ser Pro Val Ser Gly Tyr Asn Lys Leu Ala Ser Phe Ser Pro Ser Pro
              195                     200                     205
Pro Ser Pro Tyr Pro Thr Thr Val Gly Pro Val Glu Ser Ser Gly Leu
              210                     215                     220
Arg Ser Arg Tyr Arg Ser Ser Pro Thr Val Tyr Asn Ser Pro Thr Asp
   225                     230                     235                     240
Lys Glu Asp Tyr Met Thr Asp Leu Arg Thr Leu Asp Thr Phe Leu Arg
                  245                     250                     255
Ser Glu Glu Glu Lys Gln His Arg Val Lys Leu Gly Ser Pro Asp Ser
              260                     265                     270
Thr Ser Pro Ser Ser Ser Pro Thr Phe Trp Asn Tyr Ser Arg Ser Met
              275                     280                     285
Gly Asp Tyr Ala Gln Thr Leu Lys Lys Phe Gln Tyr Gln Leu Ala Cys
   290                     295                     300
Arg Ser Gln Ala Pro Cys Ala Asn Lys Asp Glu Ala Asp Leu Ser Ser
   305                     310                     315                     320
Lys Gln Ala Ala Glu Glu Val Trp Ala Arg Val Ala Met Asn Arg Gln
              325                     330                     335
Leu Leu Asp His Met Asp Ser Trp Thr Ala Lys Phe Arg Asn Trp Ile
              340                     345                     350
Asn Glu Thr Ile Leu Val Pro Leu Val Gln Glu Ile Glu Ser Val Ser
   355                     360                     365
Thr Gln Met Arg Arg Met Gly Cys Pro Glu Leu Gln Ile Gly Glu Ala
   370                     375                     380
Ser Ile Thr Ser Leu Lys Gln Ala Ala Leu Val Lys Ala Pro Leu Ile
   385                     390                     395                     400
Pro Thr Leu Asn Thr Ile Val Gln Tyr Leu Asp Leu Thr Pro Asn Gln
              405                     410                     415
Glu Tyr Leu Phe Glu Arg Ile Lys Glu Leu Ser Gln Gly Gly Cys Met
              420                     425                     430
Ser Ser Phe Arg Trp Asn Arg Gly Gly Asp Phe Lys Gly Arg Lys Trp
              435                     440                     445
Asp Thr Asp Leu Pro Thr Asp Ser Ala Ile Ile Met His Val Phe Cys
   450                     455                     460
Thr Tyr Leu Asp Ser Arg Leu Pro Pro His Pro Lys Tyr Pro Asp Gly
   465                     470                     475                     480
Lys Thr Phe Thr Ser Gln His Phe Val Gln Thr Pro Asn Lys Pro Asp
                  485                     490                     495
Val Thr Asn Glu Asn Val Phe Cys Ile Tyr Gln Ser Ala Ile Asn Pro
              500                     505                     510
Pro His Tyr Glu Leu Ile Tyr Gln Arg His Val Tyr Ile Pro Ala Lys
              515                     520                     525
Gly Gln Lys
   530 531
```

<210> 1135

664

<211> 508
<212>Amino acid
<213> Homo sapiens

<400> 1135

```
Ser Ser Ala Val Glu Phe Ile Asn Arg Asn Asn Ser Val Val Gln Val
1               5                   10                  15
Leu Leu Ala Ala Gly Ala Asp Pro Asn Leu Gly Asp Asp Phe Ser Ser
            20                  25                  30
Val Tyr Lys Thr Ala Lys Glu Gln Gly Ile His Ser Leu Glu Val Leu
        35                  40                  45
Ile Thr Arg Glu Asp Asp Phe Asn Asn Arg Leu Asn Asn Arg Ala Ser
        50                  55                  60
Phe Lys Gly Cys Thr Ala Leu His Tyr Ala Val Leu Ala Asp Asp Tyr
65                  70                  75                  80
Arg Thr Val Lys Glu Leu Leu Asp Gly Gly Ala Asn Pro Leu Gln Arg
                85                  90                  95
Asn Glu Met Gly His Thr Pro Leu Asp Tyr Ala Arg Glu Gly Glu Val
            100                 105                 110
Met Lys Leu Leu Arg Thr Ser Glu Ala Lys Tyr Gln Glu Lys Gln Arg
        115                 120                 125
Lys Arg Glu Ala Glu Glu Arg Arg Arg Phe Pro Leu Glu Gln Arg Leu
    130                 135                 140
Lys Glu His Ile Ile Gly Gln Glu Ser Ala Ile Ala Thr Val Gly Ala
145                 150                 155                 160
Ala Ile Arg Arg Lys Glu Asn Gly Trp Tyr Asp Glu Glu His Pro Leu
                165                 170                 175
Val Phe Leu Phe Leu Gly Ser Ser Gly Ile Gly Lys Thr Glu Leu Ala
            180                 185                 190
Lys Gln Thr Ala Lys Tyr Met His Lys Asp Ala Lys Lys Gly Phe Ile
        195                 200                 205
Arg Leu Asp Met Ser Glu Phe Gln Glu Arg His Glu Val Ala Lys Phe
    210                 215                 220
Ile Gly Ser Pro Pro Gly Tyr Val Gly His Glu Glu Gly Gly Gln Leu
225                 230                 235                 240
Thr Lys Lys Leu Lys Gln Cys Pro Asn Ala Val Val Leu Phe Asp Glu
                245                 250                 255
Val Asp Lys Ala His Pro Asp Val Leu Thr Ile Met Leu Gln Leu Phe
            260                 265                 270
Asp Glu Gly Arg Leu Thr Asp Gly Lys Gly Lys Thr Ile Asp Cys Lys
        275                 280                 285
Asp Ala Ile Phe Ile Met Thr Ser Asn Val Ala Ser Asp Glu Ile Ala
    290                 295                 300
Gln His Ala Leu Gln Leu Arg Gln Glu Ala Leu Glu Met Ser Arg Asn
305                 310                 315                 320
Arg Ile Ala Glu Asn Leu Gly Asp Val Gln Ile Ser Asp Lys Ile Thr
                325                 330                 335
Ile Ser Lys Asn Phe Lys Glu Asn Val Ile Arg Pro Ile Leu Lys Ala
            340                 345                 350
His Phe Arg Arg Asp Glu Phe Leu Gly Arg Ile Asn Glu Ile Val Tyr
        355                 360                 365
Phe Leu Pro Phe Cys His Ser Glu Leu Ile Gln Leu Val Asn Lys Glu
    370                 375                 380
Leu Asn Phe Trp Ala Lys Arg Ala Lys Gln Arg His Asn Ile Thr Leu
385                 390                 395                 400
Leu Trp Asp Arg Glu Val Ala Asp Val Leu Val Asp Gly Tyr Asn Val
                405                 410                 415
His Tyr Gly Ala Arg Ser Ile Lys His Glu Val Glu Arg Arg Val Gly
            420                 425                 430
Asn Gln Leu Ala Ala Ala Tyr Glu Gln Asp Leu Leu Pro Gly Gly Cys
```

```
             435                      440                    445
Thr Leu Arg Ile Thr Val Glu Asp Ser Asp Lys Gln Leu Leu Lys Ser
    450                      455                    460
Pro Glu Leu Pro Ser Pro Gln Ala Glu Lys Arg Leu Pro Lys Leu Arg
465                      470                    475                480
Leu Glu Ile Ile Asp Lys Asp Ser Lys Thr Arg Arg Leu Asp Ile Arg
                485                    490                    495
Ala Pro Leu His Pro Glu Lys Val Cys Asn Thr Ile
            500                    505            508
```

```
        <210> 1136
        <211> 81
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1136
Ser Ser Cys Asp Arg Glu Arg His Gly Ser Leu Gly Met Met Ser Gly
1                   5                  10                    15
Ser Phe Ile Leu Cys Leu Ala Leu Val Thr Arg Trp Ser Pro Gln Ala
            20                    25                    30
Ser Ser Val Pro Leu Ala Val Tyr Glu Ser Lys Thr Arg Lys Ser Tyr
        35                    40                    45
Arg Ser Gln Arg Asp Arg Asp Gly Lys Asp Arg Ser Gln Gly Met Gly
    50                    55                    60
Leu Ser Leu Leu Val Glu Thr Arg Lys Leu Leu Leu Ser Ala Asn Gln
65                    70                    75                    80
Gly
81
```

```
        <210> 1137
        <211> 260
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1137
His Thr Pro Met Ala Phe Phe Leu Ser Phe Leu Ser Thr Ser Glu Thr
1               5                  10                    15
Val Tyr Thr Phe Val Ile Leu Pro Lys Met Leu Ile Asn Leu Leu Ser
            20                    25                    30
Val Ala Arg Thr Ile Ser Phe Asn Cys Cys Ala Leu Gln Met Phe Phe
        35                    40                    45
Phe Leu Gly Phe Ala Ile Thr Asn Cys Leu Leu Leu Gly Val Met Gly
        50                    55                    60
Tyr Asp Arg Tyr Ala Ala Ile Cys His Pro Leu His Tyr Pro Thr Leu
65                    70                    75                    80
Met Ser Trp Gln Val Cys Gly Lys Leu Ala Ala Ala Cys Ala Ile Gly
            85                    90                    95
Gly Phe Leu Ala Ser Leu Thr Val Val Asn Leu Val Phe Ser Leu Pro
            100                   105                   110
Phe Cys Ser Thr Asn Lys Val Asn His Tyr Phe Cys Asp Ile Ser Ala
        115                   120                   125
Val Ile Leu Leu Ala Cys Thr Asn Thr Asp Val Asn Gly Phe Val Ile
        130                   135                   140
Phe Ile Cys Gly Val Leu Val Leu Val Val Pro Phe Leu Phe Ile Cys
```

```
145                     150                    155                    160
Val Ser Tyr Phe Cys Ile Leu Arg Thr Ile Leu Lys Ile Pro Ser Ala
                165                    170                    175
Glu Gly Arg Arg Lys Ala Phe Ser Thr Cys Ala Ser His Leu Ser Val
                180                    185                    190
Val Ile Val His Tyr Gly Cys Ala Ser Phe Ile Tyr Leu Arg Pro Thr
                195                    200                    205
Ala Asn Tyr Val Ser Asn Lys Asp Arg Leu Val Thr Val Thr Tyr Thr
        210                    215                    220
Ile Val Thr Pro Leu Leu Asn Pro Met Val Tyr Ser Leu Arg Asn Lys
225                    230                    235                    240
Asp Val Gln Leu Ala Ile Arg Lys Val Leu Gly Lys Lys Gly Ser Leu
                245                    250                    255
Lys Leu Tyr Asn
        260
```

```
<210> 1138
<211> 393
<212>Amino acid
<213> Homo sapiens
```

```
        <400> 1138
Arg Pro Pro Ala Ala Thr Arg Tyr Pro Arg Glu Lys Leu Lys Ser Met
1               5                   10                     15
Thr Ser Arg Asp Asn Tyr Lys Ala Gly Ser Arg Glu Ala Ala Ala Ala
        20                    25                     30
Ala Ala Ala Ala Val Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Glu
        35                    40                     45
Pro Tyr Pro Val Ser Gly Ala Lys Arg Lys Tyr Leu Glu Asp Ser Asp
    50                    55                     60
Pro Glu Arg Ser Asp Tyr Glu Glu Gln Gln Leu Gln Glu Glu Glu Glu
65                    70                     75                     80
Ala Arg Lys Val Lys Ser Gly Ile Arg Gln Met Arg Leu Phe Ser Gln
                85                    90                     95
Asp Glu Cys Ala Lys Ile Glu Ala Arg Ile Asp Glu Val Val Ser Arg
        100                    105                    110
Ala Glu Lys Gly Leu Tyr Asn Glu His Thr Val Asp Arg Ala Pro Leu
        115                    120                    125
Arg Asn Lys Tyr Phe Phe Gly Glu Gly Tyr Thr Tyr Gly Ala Gln Leu
    130                    135                    140
Gln Lys Arg Gly Pro Gly Gln Glu Arg Leu Tyr Pro Pro Gly Asp Val
145                    150                    155                    160
Asp Glu Ile Pro Glu Trp Val His Gln Leu Val Ile Gln Lys Leu Val
                165                    170                    175
Glu His Arg Val Ile Pro Glu Gly Phe Val Asn Ser Ala Val Ile Asn
                180                    185                    190
Asp Tyr Gln Pro Gly Gly Cys Ile Val Ser His Val Asp Pro Ile His
        195                    200                    205
Ile Phe Glu Arg Pro Ile Val Ser Val Ser Phe Phe Ser Asp Ser Ala
        210                    215                    220
Leu Cys Phe Gly Cys Lys Phe Gln Phe Lys Pro Ile Arg Val Ser Glu
225                    230                    235                    240
Pro Val Leu Ser Leu Pro Val Arg Arg Gly Ser Val Thr Val Leu Ser
                245                    250                    255
Gly Tyr Ala Ala Asp Glu Ile Thr His Cys Ile Arg Pro Gln Asp Ile
        260                    265                    270
Lys Glu Arg Arg Ala Val Ile Ile Leu Arg Lys Thr Arg Leu Asp Ala
        275                    280                    285
Pro Arg Leu Glu Thr Lys Ser Leu Ser Ser Ser Val Leu Pro Pro Ser
```

```
        290                 295                 300
Tyr Ala Ser Asp Arg Leu Ser Gly Asn Asn Arg Asp Pro Ala Leu Lys
305             310                 315                 320
Pro Lys Arg Ser His Arg Lys Ala Asp Pro Asp Ala Ala His Arg Pro
            325                 330                 335
Arg Ile Leu Glu Met Asp Lys Glu Glu Asn Arg Arg Ser Val Leu Leu
            340                 345                 350
Pro Thr His Arg Arg Arg Gly Ser Phe Ser Ser Glu Asn Tyr Trp Arg
        355                 360                 365
Lys Ser Tyr Glu Ser Ser Glu Asp Cys Ser Glu Ala Ala Gly Ser Pro
370                 375                 380
Ala Arg Lys Val Lys Met Arg Arg His
385                 390         393
```


```
<210> 1139
<211> 545
<212> Amino acid
<213> Homo sapiens
```


```
<400> 1139
Val Thr Trp His Phe Tyr Phe Cys Ser Asp His Lys Asn Gly His Tyr
1               5                   10                  15
Ile Ile Pro Gln Met Ala Asp Arg Ser Arg Gln Lys Cys Met Ser Gln
            20                  25                  30
Ser Leu Asp Leu Ser Glu Leu Ala Lys Ala Ala Lys Lys Lys Leu Gln
            35                  40                  45
Ala Leu Ser Asn Arg Leu Phe Glu Glu Leu Ala Met Asp Val Tyr Asp
        50                  55                  60
Glu Val Asp Arg Arg Glu Asn Asp Ala Val Trp Leu Ala Thr Gln Asn
65                  70                  75                  80
His Ser Thr Leu Val Thr Glu Arg Ser Ala Val Pro Phe Leu Pro Val
            85                  90                  95
Asn Pro Glu Tyr Ser Ala Thr Arg Asn Gln Gly Arg Gln Lys Leu Ala
        100                 105                 110
Arg Phe Asn Ala Arg Glu Phe Ala Thr Leu Ile Ile Asp Ile Leu Ser
    115                 120                 125
Glu Ala Lys Arg Arg Gln Gln Gly Lys Ser Leu Ser Ser Pro Thr Asp
    130                 135                 140
Asn Leu Glu Leu Ser Leu Arg Ser Gln Ser Asp Leu Asp Asp Gln His
145                 150                 155                 160
Asp Tyr Asp Ser Val Ala Ser Asp Glu Asp Thr Asp Gln Glu Pro Leu
            165                 170                 175
Arg Ser Thr Gly Ala Thr Arg Ser Asn Arg Ala Arg Ser Met Asp Ser
        180                 185                 190
Ser Asp Leu Ser Asp Gly Ala Val Thr Leu Gln Glu Tyr Leu Glu Leu
    195                 200                 205
Lys Lys Ala Leu Ala Thr Ser Glu Ala Lys Val Gln Gln Leu Met Lys
    210                 215                 220
Val Asn Ser Ser Leu Ser Asp Glu Leu Arg Arg Leu Gln Arg Glu His
225                 230                 235                 240
Phe Ala Pro Ile Ile His Lys Leu Gln Ala Glu Asn Leu Gln Leu Arg
            245                 250                 255
Gln Pro Pro Gly Pro Val Pro Thr Pro Leu Pro Ser Glu Arg Ala
        260                 265                 270
Glu His Thr Pro Met Ala Pro Gly Gly Ser Thr His Arg Arg Asp Arg
        275                 280                 285
Gln Ala Phe Ser Met Tyr Glu Pro Gly Ser Ala Leu Lys Pro Phe Gly
    290                 295                 300
Gly Pro Pro Gly Asp Glu Leu Thr Thr Arg Leu Gln Pro Phe His Ser
```

668

```
305                    310                    315                    320
Thr Glu Leu Glu Asp Asp Ala Ile Tyr Ser Val His Val Pro Ala Gly
                325                    330                    335
Leu Tyr Arg Ile Arg Lys Gly Val Ser Ala Ser Ala Val Pro Phe Thr
                340                    345                    350
Pro Ser Ser Pro Leu Leu Ser Cys Ser Gln Glu Gly Ser Arg His Thr
                355                    360                    365
Ser Lys Leu Ser Arg His Gly Ser Gly Ala Asp Ser Asp Tyr Glu Asn
370                    375                    380
Thr Gln Ser Gly Asp Pro Leu Leu Gly Leu Glu Gly Lys Arg Phe Leu
385                    390                    395                    400
Glu Leu Gly Lys Glu Glu Asp Phe His Pro Glu Leu Glu Ser Leu Asp
                405                    410                    415
Gly Asp Leu Asp Pro Gly Leu Pro Ser Thr Glu Asp Val Ile Leu Lys
                420                    425                    430
Thr Glu Gln Val Thr Lys Asn Ile Gln Glu Leu Leu Arg Ala Ala Gln
                435                    440                    445
Glu Phe Lys His Asp Ser Phe Val Pro Cys Ser Glu Lys Ile His Leu
                450                    455                    460
Ala Val Thr Glu Met Ala Ser Leu Phe Pro Lys Arg Pro Ala Leu Glu
465                    470                    475                    480
Pro Val Arg Ser Ser Leu Arg Leu Leu Asn Ala Ser Ala Tyr Arg Leu
                485                    490                    495
Gln Ser Glu Cys Arg Lys Thr Val Pro Pro Glu Pro Gly Ala Pro Val
                500                    505                    510
Asp Phe Gln Leu Leu Thr Gln Gln Val Ile Gln Cys Ala Tyr Asp Ile
                515                    520                    525
Ala Lys Ala Ala Lys Gln Leu Val Thr Ile Thr Thr Arg Glu Lys Lys
530                    535                    540
Gln
545
```

```
<210> 1140
<211> 621
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1140
Arg Tyr Leu Ser Tyr Gly Ser Gly Pro Lys Arg Phe Pro Leu Val Asp
1                5                    10                    15
Val Leu Gln Tyr Ala Leu Glu Phe Ala Ser Ser Lys Pro Val Cys Thr
                20                    25                    30
Ser Pro Val Asp Asp Ile Asp Ala Ser Ser Pro Pro Ser Gly Ser Ile
                35                    40                    45
Pro Ser Gln Thr Leu Pro Ser Thr Thr Glu Gln Gln Gly Ala Leu Ser
        50                    55                    60
Ser Glu Leu Pro Ser Thr Ser Pro Ser Ser Val Ala Ala Ile Ser Ser
65                    70                    75                    80
Arg Ser Val Ile His Lys Pro Phe Thr Gln Ser Arg Ile Pro Pro Asp
                85                    90                    95
Leu Pro Met His Pro Ala Pro Arg His Ile Thr Glu Glu Glu Leu Ser
                100                    105                    110
Val Leu Glu Ser Cys Leu His Arg Trp Arg Thr Glu Ile Glu Asn Asp
        115                    120                    125
Thr Arg Asp Leu Gln Glu Ser Ile Ser Arg Ile His Arg Thr Ile Glu
130                    135                    140
Leu Met Tyr Ser Asp Lys Ser Met Ile Gln Val Pro Tyr Arg Leu His
145                    150                    155                    160
Ala Val Leu Val His Glu Gly Gln Ala Asn Ala Gly His Tyr Trp Ala
```

```
                      165                    170                    175
Tyr Ile Phe Asp His Arg Glu Ser Arg Trp Met Lys Tyr Asn Asp Ile
              180                    185                    190
Ala Val Thr Lys Ser Ser Trp Glu Glu Leu Val Arg Asp Ser Phe Gly
              195                    200                    205
Gly Tyr Arg Asn Ala Ser Ala Tyr Cys Leu Met Tyr Ile Asn Asp Lys
         210                    215                    220
Ala Gln Phe Leu Ile Gln Glu Glu Phe Asn Lys Glu Thr Gly Gln Pro
225                    230                    235                    240
Leu Val Gly Ile Glu Thr Leu Pro Pro Asp Leu Arg Asp Phe Val Glu
              245                    250                    255
Glu Asp Asn Gln Arg Phe Glu Lys Glu Leu Glu Glu Trp Asp Ala Gln
              260                    265                    270
Leu Ala Gln Lys Ala Leu Gln Glu Lys Leu Leu Ala Ser Gln Lys Leu
              275                    280                    285
Arg Glu Ser Glu Thr Ser Val Thr Thr Ala Gln Ala Ala Gly Asp Pro
         290                    295                    300
Lys Tyr Leu Glu Gln Pro Ser Arg Ser Asp Phe Ser Lys His Leu Lys
305                    310                    315                    320
Glu Glu Thr Ile Gln Ile Ile Thr Lys Ala Ser His Glu His Glu Asp
              325                    330                    335
Lys Ser Pro Glu Thr Val Leu Gln Ser Ala Ile Lys Leu Glu Tyr Ala
              340                    345                    350
Arg Leu Val Lys Leu Ala Gln Glu Asp Thr Pro Pro Glu Thr Asp Tyr
         355                    360                    365
Arg Leu His His Val Val Val Tyr Phe Ile Gln Asn Gln Ala Pro Lys
         370                    375                    380
Lys Ile Ile Glu Lys Thr Leu Leu Glu Gln Phe Gly Asp Arg Asn Leu
385                    390                    395                    400
Ser Phe Asp Glu Arg Cys His Asn Ile Met Lys Val Ala Gln Ala Lys
              405                    410                    415
Leu Glu Met Ile Lys Pro Glu Glu Val Asn Leu Glu Glu Tyr Glu Glu
              420                    425                    430
Trp His Gln Asp Tyr Arg Lys Phe Arg Glu Thr Thr Met Tyr Leu Ile
              435                    440                    445
Ile Gly Leu Glu Asn Phe Gln Arg Glu Ser Tyr Ile Asp Ser Leu Leu
         450                    455                    460
Phe Leu Ile Cys Ala Tyr Gln Asn Asn Lys Glu Leu Leu Ser Lys Gly
465                    470                    475                    480
Leu Tyr Arg Gly His Asp Glu Glu Leu Ile Ser His Tyr Arg Arg Glu
              485                    490                    495
Cys Leu Leu Lys Leu Asn Glu Gln Ala Ala Glu Leu Phe Glu Ser Gly
         500                    505                    510
Glu Asp Arg Glu Val Asn Asn Gly Leu Ile Ile Met Asn Glu Phe Ile
         515                    520                    525
Val Pro Phe Leu Pro Leu Leu Leu Val Asp Glu Met Glu Glu Lys Asp
         530                    535                    540
Ile Leu Ala Val Glu Asp Met Arg Asn Arg Trp Cys Ser Tyr Leu Gly
545                    550                    555                    560
Gln Glu Met Glu Pro His Leu Gln Glu Lys Leu Thr Asp Phe Leu Pro
              565                    570                    575
Lys Leu Leu Asp Cys Ser Met Glu Ile Lys Ser Phe His Glu Pro Pro
              580                    585                    590
Lys Leu Pro Ser Tyr Ser Thr His Glu Leu Cys Glu Arg Phe Ala Arg
         595                    600                    605
Ile Met Leu Ser Leu Ser Arg Thr Pro Ala Asp Gly Arg
         610                    615                    620 621


         <210> 1141
         <211> 154
         <212> Amino acid
         <213> Homo sapiens
```

```
     <400> 1141
Ala Gln Val Tyr Val Arg Met Asp Ser Phe Asp Glu Asp Leu Ala Arg
1               5                   10                  15
Pro Ser Gly Leu Leu Ala Gln Glu Arg Lys Leu Cys Arg Asp Leu Val
            20                  25                  30
His Ser Asn Lys Lys Glu Gln Glu Phe Arg Ser Ile Phe Gln His Ile
        35                  40                  45
Gln Ser Ala Gln Ser Gln Arg Ser Pro Ser Glu Leu Phe Ala Gln His
    50                  55                  60
Met Val Pro Ile Val His His Val Lys Glu His His Phe Gly Ser Ser
65                  70                  75                  80
Gly Met Thr Leu His Glu Arg Phe Thr Lys Tyr Leu Lys Arg Gly Thr
            85                  90                  95
Glu Gln Glu Ala Ala Lys Asn Lys Lys Ser Pro Glu Ile His Arg Arg
            100                 105                 110
Ile Asp Ile Ser Pro Ser Thr Phe Arg Lys His Gly Leu Ala His Asp
            115                 120                 125
Glu Met Lys Ser Pro Arg Glu Pro Gly Tyr Lys Asp Gly His Asn Ser
            130                 135                 140
Lys Asn Glu Leu Gln Arg Val Asn Phe Tyr
145                 150                 154


     <210> 1142
     <211> 121
     <212> Amino acid
     <213> Homo sapiens




     <400> 1142
Thr Tyr Thr Phe Cys Phe Ser Leu Met Ile Ile Leu Leu Thr Ile Ile
1               5                   10                  15
Gln Gly Leu Ile Leu Glu Ala Phe Gly Glu Leu Arg Asp Gln Leu Asp
            20                  25                  30
Gln Val Lys Glu Asp Met Glu Thr Lys Cys Phe Ile Cys Gly Ile Gly
        35                  40                  45
Asn Asp Tyr Phe Asp Thr Val Pro His Gly Phe Glu Thr His Thr Leu
    50                  55                  60
Gln Glu His Asn Leu Ala Asn Tyr Leu Phe Phe Leu Met Tyr Leu Ile
65                  70                  75                  80
Asn Lys Asp Glu Thr Glu His Thr Gly Gln Glu Ser Tyr Val Trp Lys
            85                  90                  95
Met Tyr Gln Glu Arg Cys Trp Glu Phe Phe Pro Ala Gly Asp Cys Phe
            100                 105                 110
Arg Lys Gln Tyr Glu Asp Gln Leu Asn
            115                 120 121


     <210> 1143
     <211> 851
     <212> Amino acid
     <213> Homo sapiens
```

<400> 1143

```
Phe Arg Arg Lys Gly Gly Gly Gly Pro Lys Asp Phe Gly Ala Gly Leu
1               5                   10                  15
Lys Tyr Asn Ser Arg His Glu Lys Val Asn Gly Leu Glu Glu Gly Val
            20                  25                  30
Glu Phe Leu Pro Val Asn Asn Val Lys Lys Val Glu Lys His Gly Pro
        35                  40                  45
Gly Arg Trp Val Val Leu Ala Ala Val Leu Ile Gly Leu Leu Leu Val
    50                  55                  60
Leu Leu Gly Ile Gly Phe Leu Val Trp His Leu Gln Tyr Arg Asp Val
65                  70                  75                  80
Arg Val Gln Lys Val Phe Asn Gly Tyr Met Arg Ile Thr Asn Glu Asn
            85                  90                  95
Phe Val Asp Ala Tyr Glu Asn Ser Asn Ser Thr Glu Phe Val Ser Leu
        100                 105                 110
Ala Ser Lys Val Lys Asp Ala Leu Lys Leu Leu Tyr Ser Gly Val Pro
    115                 120                 125
Phe Leu Gly Pro Tyr His Lys Glu Ser Ala Val Thr Ala Phe Ser Glu
    130                 135                 140
Gly Ser Val Ile Ala Tyr Tyr Trp Ser Glu Phe Ser Ile Pro Gln His
145                 150                 155                 160
Leu Val Glu Glu Ala Glu Arg Val Met Ala Glu Glu Arg Val Val Met
            165                 170                 175
Leu Pro Pro Arg Ala Arg Ser Leu Lys Ser Phe Val Val Thr Ser Val
        180                 185                 190
Val Ala Phe Pro Thr Asp Ser Lys Thr Val Gln Arg Thr Gln Asp Asn
    195                 200                 205
Ser Cys Ser Phe Gly Leu His Ala Arg Gly Val Glu Leu Met Arg Phe
    210                 215                 220
Thr Thr Pro Gly Phe Pro Asp Ser Pro Tyr Pro Ala His Ala Arg Cys
225                 230                 235                 240
Gln Trp Ala Leu Arg Gly Asp Ala Asp Ser Val Leu Ser Leu Thr Phe
            245                 250                 255
Arg Ser Phe Asp Leu Ala Ser Cys Asp Glu Arg Gly Arg His Leu Val
        260                 265                 270
Thr Val Tyr Asn Thr Leu Ser Pro Met Glu Pro His Ala Leu Val Gln
    275                 280                 285
Leu Cys Gly Thr Tyr Pro Pro Ser Tyr Asn Leu Thr Phe His Ser Ser
    290                 295                 300
Gln Asn Val Leu Leu Ile Thr Leu Ile Thr Asn Thr Glu Arg Arg His
305                 310                 315                 320
Pro Gly Phe Glu Ala Thr Phe Phe Gln Leu Pro Arg Met Ser Ser Cys
            325                 330                 335
Gly Gly Arg Leu Arg Lys Ala Gln Gly Thr Phe Asn Ser Pro Tyr Tyr
        340                 345                 350
Pro Gly His Tyr Pro Pro Asn Ile Asp Cys Thr Trp Asn Ile Glu Val
    355                 360                 365
Pro Asn Asn Gln His Val Lys Val Arg Phe Lys Phe Phe Tyr Leu Leu
    370                 375                 380
Glu Pro Gly Val Pro Ala Gly Thr Cys Pro Lys Asp Tyr Val Glu Ile
385                 390                 395                 400
Asn Gly Glu Lys Tyr Cys Gly Glu Arg Ser Gln Phe Val Val Thr Ser
            405                 410                 415
Asn Ser Asn Lys Ile Thr Val Arg Phe His Ser Asp Gln Ser Tyr Thr
        420                 425                 430
Asp Thr Gly Phe Leu Ala Glu Tyr Leu Ser Tyr Asp Ser Ser Asp Pro
    435                 440                 445
Cys Pro Gly Gln Phe Thr Cys Arg Thr Gly Arg Cys Ile Arg Lys Glu
    450                 455                 460
Leu Arg Cys Asp Gly Trp Ala Asp Cys Thr Asp His Ser Asp Glu Leu
465                 470                 475                 480
Asn Cys Ser Cys Asp Ala Gly His Gln Phe Thr Cys Lys Asn Lys Phe
            485                 490                 495
Cys Lys Pro Leu Phe Trp Val Cys Asp Ser Leu Asn Asp Cys Gly Asp
```

```
                    500                    505                    510
Asn Ser Asp Glu Gln Gly Cys Ser Cys Pro Ala Gln Thr Phe Arg Cys
        515                    520                    525
Ser Asn Gly Lys Cys Leu Ser Lys Ser Gln Gln Cys Asn Gly Lys Asp
        530                    535                    540
Asp Cys Gly Asp Gly Ser Asp Glu Ala Ser Cys Pro Lys Val Asn Val
545                    550                    555                    560
Val Thr Cys Thr Lys His Thr Tyr Arg Cys Leu Asn Gly Leu Cys Leu
                565                    570                    575
Ser Lys Gly Asn Pro Glu Cys Asp Gly Lys Glu Asp Cys Ser Asp Gly
        580                    585                    590
Ser Asp Glu Lys Asp Cys Asp Cys Gly Leu Arg Ser Phe Thr Arg Gln
        595                    600                    605
Ala Arg Val Val Gly Gly Thr Asp Ala Asp Glu Gly Glu Trp Pro Trp
        610                    615                    620
Gln Val Ser Leu His Ala Leu Gly Gln Gly His Ile Cys Gly Ala Ser
625                    630                    635                    640
Leu Ile Ser Pro Asn Trp Leu Val Ser Ala Ala His Cys Tyr Ile Asp
                645                    650                    655
Asp Arg Gly Phe Arg Tyr Ser Asp Pro Thr Gln Trp Thr Ala Phe Leu
                660                    665                    670
Gly Leu His Asp Gln Ser Gln Arg Ser Ala Pro Gly Val Gln Glu Arg
        675                    680                    685
Arg Leu Lys Arg Ile Ile Ser His Pro Phe Phe Asn Asp Phe Thr Phe
        690                    695                    700
Asp Tyr Asp Ile Ala Leu Leu Glu Leu Glu Lys Pro Ala Glu Tyr Ser
705                    710                    715                    720
Ser Met Val Arg Pro Ile Cys Leu Pro Asp Ala Ser His Val Phe Pro
                725                    730                    735
Ala Gly Lys Ala Ile Trp Val Thr Gly Trp Gly His Thr Gln Tyr Gly
        740                    745                    750
Gly Thr Gly Ala Leu Ile Leu Gln Lys Gly Glu Ile Arg Val Ile Asn
        755                    760                    765
Gln Thr Thr Cys Glu Asn Leu Leu Pro Gln Gln Ile Thr Pro Arg Met
        770                    775                    780
Met Cys Val Gly Phe Leu Ser Gly Gly Val Asp Ser Cys Gln Gly Asp
785                    790                    795                    800
Ser Gly Gly Pro Leu Ser Ser Val Glu Ala Asp Gly Arg Ile Phe Gln
                805                    810                    815
Ala Gly Val Val Ser Trp Gly Asp Gly Cys Ala Gln Arg Asn Lys Pro
        820                    825                    830
Gly Val Tyr Thr Arg Leu Pro Leu Phe Arg Asp Trp Ile Lys Glu Asn
        835                    840                    845
Thr Gly Val
850 851
```

```
    <210> 1144
    <211> 346
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(346)
    <223> X = any amino acid or stop code



    <400> 1144
Arg His Glu Glu Asp Leu Gly Asn Leu Trp Glu Asn Thr Arg Phe Thr
    1                    5                    10                    15
```

```
Asp Cys Ser Phe Phe Val Arg Gly Gln Glu Phe Lys Ala His Lys Ser
            20                  25                  30
Val Leu Ala Ala Arg Ser Pro Val Phe Asn Ala Met Phe Glu His Glu
            35                  40                  45
Met Glu Glu Ser Lys Lys Asn Arg Val Glu Ile Asn Asp Leu Asp Pro
        50                  55                  60
Glu Val Phe Lys Glu Met Met Arg Phe Ile Tyr Thr Gly Arg Ala Pro
    65                  70                  75                  80
Asn Leu Asp Lys Met Ala Asp Asn Leu Leu Ala Ala Ala Asp Lys Tyr
                85                  90                  95
Ala Leu Glu Arg Leu Lys Val Met Cys Glu Lys Ala Leu Cys Ser Asn
            100                 105                 110
Leu Ser Val Glu Asn Val Ala Asp Thr Leu Val Leu Ala Asp Leu His
        115                 120                 125
Ser Ala Glu Gln Leu Lys Ala Gln Ala Ile Asp Phe Ile Asn Arg Cys
    130                 135                 140
Ser Val Leu Arg Gln Leu Gly Cys Lys Asp Gly Lys Asn Trp Asn Ser
145                 150                 155                 160
Asn Gln Ala Thr Asp Ile Met Glu Thr Ser Gly Gly Lys Ser Met Ile
                165                 170                 175
Gln Ser His Pro His Leu Val Ala Glu Ala Phe Arg Ala Leu Ala Ser
            180                 185                 190
Ala Gln Gly Pro Gln Phe Gly Ile Pro Arg Lys Arg Leu Lys Gln Ser
            195                 200                 205
Xaa Asn Leu Gly Asn Leu Trp Glu Asn Thr Arg Phe Thr Asp Cys Ser
    210                 215                 220
Phe Phe Val Arg Gly Gln Glu Phe Lys Ala His Lys Ser Val Leu Ala
225                 230                 235                 240
Ala Arg Ser Pro Val Phe Asn Ala Met Phe Glu His Glu Met Glu Glu
            245                 250                 255
Ser Lys Lys Asn Arg Val Glu Ile Asn Asp Leu Asp Pro Glu Val Phe
        260                 265                 270
Lys Glu Met Met Arg Phe Ile Tyr Thr Gly Arg Ala Pro Asn Leu Asp
    275                 280                 285
Lys Met Ala Asp Asn Leu Leu Ala Ala Ala Asp Lys Tyr Ala Leu Glu
    290                 295                 300
Arg Leu Lys Val Met Cys Glu Lys Ala Leu Cys Ser Asn Leu Ser Val
305                 310                 315                 320
Glu Asn Val Ala Asp Thr Leu Val Leu Ala Asp Leu His Ser Gly Arg
                325                 330                 335
Thr Val Glu Ser Thr Ser His Arg Leu Tyr
                340                 345 346
```

```
<210> 1145
<211> 339
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(339)
<223> X = any amino acid or stop code
```

```
<400> 1145
Gln Arg Gly Gly Ile Pro Gly Lys Phe Gln Glu Asp Ser Gly Ser Val
1               5                   10                  15
Asp Trp Ala Leu Gly Pro Phe Trp Gly Ile Phe Gln Ala Asp Phe Gly
            20                  25                  30
Cys Met Arg Phe Tyr Leu Ser Ala Gln Thr Ser Asp Pro Val Leu Arg
```

674

```
              35                    40                    45
Met Xaa Trp Gly Pro Ser Pro Ile Ser His Pro Thr Ser Leu Cys Pro
    50                    55                    60
Gly Gly Gly Gly Ala Gly Gln Thr Thr Gly Ser Leu Cys Leu Gly Gln
65                    70                    75                    80
Gln Cys Cys Pro Leu Ser Cys Pro Asn Ile Pro Ser Arg His Lys Arg
                85                    90                    95
Trp Arg Leu Xaa Ala Ala Leu Val Ala Gly Ser Arg Gly Ser Cys Thr
                100                   105                   110
Leu Arg Ser Xaa Arg Xaa Arg Thr Pro Leu Pro Val Thr Arg Asn Leu
            115                   120                   125
Pro Arg Cys His Leu His Leu His Pro Thr Gly Asp Leu Arg Val His
    130                   135                   140
Val His Gln His Cys Leu Leu His Gly His Val Pro Pro Gly Ala Ala
145                   150                   155                   160
Leu Leu Gln Cys Gly Gly Cys Asp Leu Arg Gly Glu Ala Ala Gly Leu
                165                   170                   175
Leu Phe Leu Gly His Ala Cys Leu Arg Gly Ser Val Asn Leu Arg Arg
                180                   185                   190
Asp Gln Trp Leu Pro Val Pro Tyr Ser Arg Leu Cys Phe Ser Gly Ala
            195                   200                   205
Arg Glu Gly His Leu Pro Ser Leu Leu Ala Met Ile His Val Arg His
    210                   215                   220
Cys Thr Pro Ile Pro Ala Leu Leu Val Cys Pro Ile Lys Val Asn Leu
225                   230                   235                   240
Leu Ile Pro Val Ala Tyr Leu Val Phe Trp Ala Phe Leu Leu Val Phe
                245                   250                   255
Ser Phe Ile Ser Glu His Met Val Cys Gly Val Gly Val Ile Ile Ile
                260                   265                   270
Leu Thr Gly Val Pro Ile Phe Phe Leu Gly Val Phe Trp Arg Ser Lys
            275                   280                   285
Pro Lys Cys Val His Arg Leu Thr Glu Ser Met Thr His Trp Gly Gln
        290                   295                   300
Glu Leu Cys Phe Val Val Tyr Pro Gln Asp Ala Pro Glu Glu Glu Glu
305                   310                   315                   320
Asn Gly Pro Cys Pro Pro Ser Leu Leu Pro Ala Thr Asp Lys Pro Ser
                325                   330                   335
Lys Pro Gln
    339
```

```
    <210> 1146
    <211> 425
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(425)
    <223> X = any amino acid or stop code
```

```
    <400> 1146
Ala Ala Ala Leu Val Ala Glu Tyr Leu Ala Leu Leu Glu Asp His Arg
1                   5                   10                    15
His Leu Pro Val Gly Cys Val Ser Phe Gln Asn Ile Ser Ser Asn Val
                20                    25                    30
Leu Glu Glu Ser Ala Ile Ser Asp Asp Ile Leu Ser Pro Asp Glu Glu
            35                    40                    45
Gly Phe Cys Ser Gly Lys His Phe Thr Glu Leu Gly Leu Val Gly Leu
    50                    55                    60
```

```
Leu Glu Gln Ala Ala Gly Tyr Phe Thr Met Gly Gly Leu Tyr Glu Ala
 65               70              75                  80
Val Asn Glu Val Tyr Lys Asn Leu Ile Pro Ile Leu Glu Ala His Arg
              85                  90                  95
Asp Tyr Lys Lys Leu Ala Ala Val His Gly Lys Leu Gln Glu Ala Phe
            100                 105                 110
Thr Lys Ile Met His Gln Ser Ser Gly Trp Glu Arg Val Phe Gly Thr
        115                 120                 125
Tyr Phe Arg Val Gly Phe Tyr Gly Ala His Phe Gly Asp Leu Asp Glu
    130                 135                 140
Gln Glu Phe Val Tyr Lys Glu Pro Ser Ile Thr Lys Leu Ala Glu Ile
145                 150                 155                 160
Ser His Arg Leu Glu Glu Phe Tyr Thr Glu Arg Phe Gly Asp Asp Val
            165                 170                 175
Val Glu Ile Ile Lys Asp Ser Asn Pro Val Asp Lys Ser Lys Leu Asp
            180                 185                 190
Ser Gln Lys Ala Tyr Ile Gln Ile Thr Tyr Val Glu Pro Tyr Phe Asp
        195                 200                 205
Thr Tyr Glu Leu Lys Asp Arg Val Thr Tyr Phe Asp Arg Asn Tyr Gly
    210                 215                 220
Leu Arg Thr Phe Leu Phe Cys Thr Pro Phe Thr Pro Asp Gly Arg Ala
225                 230                 235                 240
His Gly Glu Leu Pro Glu Gln His Lys Arg Lys Thr Leu Leu Ser Thr
            245                 250                 255
Asp His Ala Phe Pro Tyr Ile Lys Thr Arg Ile Arg Val Cys His Arg
            260                 265                 270
Glu Glu Thr Val Leu Thr Pro Val Glu Val Ala Ile Glu Asp Met Gln
    275                 280                 285
Lys Lys Thr Arg Glu Leu Ala Phe Ala Thr Glu Gln Asp Pro Pro Asp
290                 295                 300
Ala Lys Met Leu Gln Met Val Leu Gln Gly Ser Val Gly Pro Thr Val
305             310                 315                 320
Asn Gln Gly Pro Leu Glu Val Ala Gln Val Phe Leu Ala Glu Ile Pro
            325                 330                 335
Glu Asp Pro Lys Leu Phe Arg His His Asn Lys Leu Arg Leu Cys Phe
        340                 345                 350
Lys Asp Phe Xaa Lys Lys Cys Glu Asp Ala Leu Arg Lys Asn Lys Ala
        355                 360                 365
Leu Ile Gly Pro Asp Gln Lys Glu Tyr His Arg Glu Leu Glu Arg Asn
    370                 375                 380
Tyr Cys Arg Leu Arg Glu Ala Leu Gln Pro Leu Leu Thr Gln Arg Leu
385                 390                 395                 400
Pro Gln Leu Met Ala Pro Thr Pro Pro Gly Leu Arg Asn Ser Leu Asn
                405                 410                 415
Arg Ala Ser Phe Arg Lys Ala Asp Leu
            420                 425
```

<210> 1147
<211> 198
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(198)
<223> X = any amino acid or stop code

<400> 1147
Gly Glu Gly Gln Gln Trp Gln Ser Thr Pro Leu Ser Pro Leu Gln Pro

```
      1                     5                     10                    15
    Thr Val Ala Asp Phe Leu Asn Leu Ala Trp Trp Thr Ser Ala Ala Ala
                20                    25                    30
    Trp Xaa Val Leu Ser Gly Arg Trp Val Glu Lys Val Leu Pro Gly Arg
                35                    40                    45
    Glu Gly Ser Glu Glu Lys Xaa Gly Met Ala Ser Ser Ser Ala Asp His
        50                    55                    60
    Leu His Ser Ala Pro Arg Ala Leu Gln Ser Leu Phe Gln Gln Leu Leu
    65                    70                    75                    80
    Tyr Gly Leu Ile Tyr His Ser Trp Phe Gln Ala Gly Arg Xaa Gly Phe
                    85                    90                    95
    Gly Gly Ala Ser Ser Ser Pro Gly Pro Gln Ser Glu Leu Arg Arg Leu
                100                   105                   110
    His Gly Glu Gly Gly Val Tyr Asp Xaa Gly Arg Pro Glu Thr Leu Pro
                115                   120                   125
    Gly Ser Val Gly Gly Ala Glu Ala Leu Trp Ala Leu Ala Asp Pro Ala
        130                   135                   140
    Glu Ala Glu Gly Ser Pro Glu Thr Arg Glu Ser Ser Cys Val Met Lys
    145                   150                   155                   160
    Gln Thr Gln Tyr Tyr Phe Gly Ser Val Asn Ala Ser Tyr Asn Ala Ile
                    165                   170                   175
    Ile Asp Cys Gly Asn Cys Ser Arg Cys Trp Gln Trp Gly Gly Thr Arg
                180                   185                   190
    Gly Gln Gly Arg Asn Leu
        195                   198


        <210> 1148
        <211> 317
        <212>Amino acid
        <213> Homo sapiens



        <400> 1148
    Val Ala Gly Ile Pro Ala Cys Phe Asp Asn Phe Thr Glu Ala Leu Ala
    1                   5                     10                    15
    Glu Thr Ala Cys Arg Gln Met Gly Tyr Ser Ser Lys Pro Thr Phe Arg
                20                    25                    30
    Ala Val Glu Ile Gly Pro Asp Gln Asp Leu Asp Val Val Glu Ile Thr
                35                    40                    45
    Glu Asn Ser Gln Glu Leu Arg Met Arg Asn Ser Ser Gly Pro Cys Leu
        50                    55                    60
    Ser Gly Ser Leu Val Ser Leu His Cys Leu Ala Cys Gly Glu Ser Leu
    65                    70                    75                    80
    Lys Thr Pro Arg Val Val Gly Gly Glu Glu Ala Ser Val Asp Ser Trp
                    85                    90                    95
    Pro Trp Gln Val Ser Ile Gln Tyr Asp Lys Gln His Val Cys Gly Gly
                100                   105                   110
    Ser Ile Leu Asp Pro His Trp Val Leu Thr Ala Ala His Cys Phe Arg
                115                   120                   125
    Lys His Thr Asp Val Phe Asn Trp Lys Val Arg Ala Gly Ser Asp Lys
        130                   135                   140
    Leu Gly Ser Phe Pro Ser Leu Ala Val Ala Lys Ile Ile Ile Ile Glu
    145                   150                   155                   160
    Phe Asn Pro Met Tyr Pro Lys Asp Asn Asp Ile Ala Leu Met Lys Leu
                    165                   170                   175
    Gln Phe Pro Leu Thr Phe Ser Gly Thr Val Arg Pro Ile Cys Leu Pro
                180                   185                   190
    Phe Phe Asp Glu Glu Leu Thr Pro Ala Thr Pro Leu Trp Ile Ile Gly
        195                   200                   205
    Trp Gly Phe Thr Lys Gln Asn Gly Gly Lys Met Ser Asp Ile Leu Leu
```

```
            210                      215                      220
Gln Ala Ser Val Gln Val Ile Asp Ser Thr Arg Cys Asn Ala Asp Asp
225                      230                      235                      240
Ala Tyr Gln Gly Glu Val Thr Glu Lys Met Met Cys Ala Gly Ile Pro
                245                      250                      255
Glu Gly Gly Val Asp Thr Cys Gln Gly Asp Ser Gly Gly Pro Leu Met
                260           .          265                      270 .
Tyr Gln Ser Asp Gln Trp His Val Val Gly Ile Val Ser Trp Gly Tyr
                275                      280                      285
Gly Cys Gly Gly Pro Ser Thr Pro Gly Val Tyr Thr Lys Val Ser Ala
                290                      295                      300
Tyr Leu Asn Trp Ile Tyr Asn Val Trp Lys Ala Glu Leu
305                      310                      315     317
```

```
        <210> 1149
        <211> 320
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1149
Thr Ile Ser Thr Val Arg Trp Asn Ser Arg Ile Gly Met Val Leu Gly
  1               5                   10                      15
Val Ala Ile Gln Lys Arg Ala Val Pro Gly Leu Tyr Ala Phe Glu Glu
            20                      25                      30
Ala Tyr Ala Arg Ala Asp Lys Glu Ala Pro Arg Pro Cys His Lys Gly
        35                      40                      45
Ser Trp Cys Ser Ser Asn Gln Leu Cys Arg Glu Cys Gln Ala Phe Met
    50                      55                      60
Ala His Thr Met Pro Lys Leu Lys Ala Phe Ser Met Ser Ser Ala Tyr
65                      70                      75                      80
Asn Ala Tyr Arg Ala Val Tyr Ala Val Ala His Gly Leu His Gln Leu
                85                      90                      95
Leu Gly Cys Ala Ser Gly Ala Cys Ser Arg Gly Arg Val Tyr Pro Trp
            100                     105                     110
Gln Leu Leu Glu Gln Ile His Lys Val His Phe Leu Leu His Lys Asp
        115                     120                     125
Thr Val Ala Phe Asn Asp Asn Arg Asp Pro Leu Ser Ser Tyr Asn Ile
        130                     135                     140
Ile Ala Trp Asp Trp Asn Gly Pro Lys Trp Thr Phe Thr Val Leu Gly
145                     150                     155                     160
Ser Ser Thr Trp Ser Pro Val Gln Leu Asn Ile Asn Glu Thr Lys Ile
                165                     170                     175
Gln Trp His Gly Lys Asp Asn Gln Val Pro Lys Ser Val Cys Ser Ser
            180                     185                     190
Asp Cys Leu Glu Gly His Gln Arg Val Val Thr Gly Phe His His Cys
        195                     200                     205
Cys Phe Glu Cys Val Pro Cys Gly Ala Gly Thr Phe Leu Asn Lys Ser
        210                     215                     220
Ser Tyr Leu Gly Lys Asp Leu Pro Glu Asn Tyr Asn Glu Ala Lys Cys
225                     230                     235                     240
Val Thr Phe Ser Leu Leu Phe Asn Phe Val Ser Trp Ile Ala Phe Phe
                245                     250                     255
Thr Thr Ala Ser Val Tyr Asp Gly Lys Tyr Leu Pro Ala Ala Asn Met
                260                     265                     270
Met Ala Gly Leu Ser Ser Leu Ser Ser Gly Phe Gly Gly Tyr Phe Leu
        275                     280                     285
Pro Lys Cys Tyr Val Ile Leu Cys Arg Pro Asp Leu Asn Ser Thr Glu
        290                     295                     300
His Phe Gln Ala Ser Ile Gln Asp Tyr Thr Arg Arg Cys Gly Ser Thr
```

678

305   310   315   320


```
        <210> 1150
        <211> 458
        <212>Amino acid
        <213> Homo sapiens




        <400> 1150
Val Ala Arg Gly Ala Phe His Pro Lys Met Gly Pro Ser Phe Pro Ser
 1               5                  10                 15
Pro Lys Pro Gly Ser Glu Arg Leu Ser Phe Val Ser Ala Lys Gln Ser
            20                 25                 30
Thr Gly Gln Asp Thr Glu Ala Glu Leu Gln Asp Ala Thr Leu Ala Leu
            35                 40                 45
His Gly Leu Thr Val Glu Asp Glu Gly Asn Tyr Thr Cys Glu Phe Ala
    50                 55                 60
Thr Phe Pro Lys Gly Ser Val Arg Gly Met Thr Trp Leu Arg Val Ile
 65                 70                 75                 80
Ala Lys Pro Lys Asn Gln Ala Glu Ala Gln Lys Val Thr Phe Ser Gln
                85                 90                 95
Asp Pro Thr Thr Val Ala Leu Cys Ile Ser Lys Glu Gly Arg Pro Pro
           100                105                110
Ala Arg Ile Ser Trp Leu Ser Ser Leu Asp Trp Glu Ala Lys Glu Thr
       115                120                125
Gln Val Ser Gly Thr Leu Ala Gly Thr Val Thr Val Thr Ser Arg Phe
   130                135                140
Thr Leu Val Pro Ser Gly Arg Ala Asp Gly Val Thr Val Thr Cys Lys
145                150                155                160
Val Glu His Glu Ser Phe Glu Glu Pro Ala Leu Ile Pro Val Thr Leu
               165                170                175
Ser Val Arg Tyr Pro Pro Glu Val Ser Ile Ser Gly Tyr Asp Asp Asn
           180                185                190
Trp Tyr Leu Gly Arg Thr Asp Ala Thr Leu Ser Cys Asp Val Arg Ser
       195                200                205
Asn Pro Glu Pro Thr Gly Tyr Asp Trp Ser Thr Thr Ser Gly Thr Phe
    210                215                220
Pro Thr Ser Ala Val Ala Gln Gly Ser Gln Leu Val Ile His Ala Val
225                230                235                240
Asp Ser Leu Phe Asn Thr Thr Phe Val Cys Thr Val Thr Asn Ala Val
               245                250                255
Gly Met Gly Arg Ala Glu Gln Val Ile Phe Val Arg Glu Thr Pro Asn
           260                265                270
Thr Ala Gly Ala Gly Ala Thr Gly Gly Ile Ile Gly Gly Ile Ile Ala
       275                280                285
Ala Ile Ile Ala Thr Ala Asp Ala Thr Gly Ile Leu Ile Cys Arg Gln
   290                295                300
Gln Arg Lys Glu Gln Thr Leu Gln Gly Ala Glu Glu Asp Glu Asp Leu
305                310                315                320
Glu Gly Pro Pro Ser Tyr Lys Pro Pro Thr Pro Lys Ala Lys Leu Glu
           325                330                335
Ala Gln Glu Met Pro Ser Gln Leu Phe Thr Leu Gly Ala Ser Glu His
           340                345                350
Ser Pro Leu Lys Thr Pro Tyr Phe Asp Ala Gly Ala Ser Cys Thr Glu
       355                360                365
Gln Glu Met Pro Arg Tyr His Glu Leu Pro Thr Leu Glu Glu Arg Ser
   370                375                380
Gly Pro Leu His Pro Gly Ala Thr Ser Leu Gly Ser Pro Ile Pro Val
```

```
385                        390                    395
Pro Pro Gly Pro Pro Ala Val Glu Asp Val Ser Leu Asp Leu Glu Asp
                    405                    410                    415
Glu Glu Gly Glu Glu Glu Glu Glu Tyr Leu Asp Lys Ile Asn Pro Ile
                    420                    425                    430
Tyr Asp Ala Leu Ser Tyr Ser Ser Pro Ser Asp Ser Tyr Gln Gly Lys
                    435                    440                    445
Gly Phe Val Met Ser Arg Ala Met Tyr Val
          450                    455     458
```

```
<210> 1151
<211> 608
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1151
Gly Thr Arg Leu Arg Glu Asp Lys Asn His Asn Met Tyr Val Ala Gly
 1               5                   10                  15
Cys Thr Glu Val Glu Val Lys Ser Thr Glu Glu Ala Phe Glu Val Phe
                20                  25                  30
Trp Arg Gly Gln Lys Lys Arg Arg Ile Ala Asn Thr His Leu Asn Arg
          35                  40                  45
Glu Ser Ser Arg Ser His Ser Val Phe Asn Ile Lys Leu Val Gln Ala
    50                  55                  60
Pro Leu Asp Ala Asp Gly Asp Asn Val Leu Gln Glu Lys Glu Gln Ile
65                  70                  75                  80
Thr Ile Ser Gln Leu Ser Leu Val Asp Leu Ala Gly Ser Glu Arg Thr
                85                  90                  95
Asn Arg Thr Arg Ala Glu Gly Asn Arg Leu Arg Glu Ala Gly Asn Ile
          100                 105                 110
Asn Gln Ser Leu Met Thr Leu Arg Thr Cys Met Asp Val Leu Arg Glu
          115                 120                 125
Asn Gln Met Tyr Gly Thr Asn Lys Met Val Pro Tyr Arg Asp Ser Lys
          130                 135                 140
Leu Thr His Leu Phe Lys Asn Tyr Phe Asp Gly Glu Gly Lys Val Arg
145                 150                 155                 160
Met Ile Val Cys Val Asn Pro Lys Ala Glu Asp Tyr Glu Glu Asn Leu
                165                 170                 175
Gln Val Met Arg Phe Ala Glu Val Thr Gln Glu Val Glu Val Ala Arg
          180                 185                 190
Pro Val Asp Lys Ala Ile Cys Gly Leu Thr Pro Gly Arg Arg Tyr Arg
          195                 200                 205
Asn Gln Pro Arg Gly Pro Ile Gly Asn Glu Pro Leu Val Thr Asp Val
    210                 215                 220
Val Leu Gln Ser Phe Pro Pro Leu Pro Ser Cys Glu Ile Leu Asp Ile
225                 230                 235                 240
Asn Asp Glu Gln Thr Leu Pro Arg Leu Ile Glu Ala Leu Glu Lys Arg
          245                 250                 255
His Asn Leu Arg Gln Met Met Ile Asp Glu Phe Asn Lys Gln Ser Asn
          260                 265                 270
Ala Phe Lys Ala Leu Leu Gln Glu Phe Asp Asn Ala Val Leu Ser Lys
          275                 280                 285
Glu Asn His Met Gln Gly Lys Leu Asn Glu Lys Glu Lys Met Ile Ser
    290                 295                 300
Gly Gln Lys Leu Glu Ile Glu Arg Leu Glu Lys Lys Asn Lys Thr Leu
305                 310                 315                 320
Glu Tyr Lys Ile Glu Ile Leu Glu Lys Thr Thr Thr Ile Tyr Glu Glu
                325                 330                 335
Asp Lys Arg Asn Leu Gln Gln Glu Leu Glu Thr Gln Asn Gln Lys Leu
```

```
                    340                      345                      350
Gln Arg Gln Phe Ser Asp Lys Arg Arg Leu Glu Ala Arg Leu Gln Gly
            355                      360                      365
Met Val Thr Glu Thr Thr Met Lys Trp Glu Lys Glu Cys Glu Arg Arg
            370                      375                      380
Val Ala Ala Lys Gln Leu Glu Met Gln Asn Lys Leu Trp Val Lys Asp
385                      390                      395                      400
Glu Lys Leu Lys Gln Leu Lys Ala Ile Val Thr Glu Pro Lys Thr Glu
                    405                      410                      415
Lys Pro Glu Arg Pro Ser Arg Glu Arg Asp Arg Glu Lys Val Thr Gln
                    420                      425                      430
Arg Ser Val Ser Pro Ser Pro Val Pro Leu Leu Phe Gln Pro Asp Gln
            435                      440                      445
Asn Ala Pro Pro Ile Arg Leu Arg His Arg Arg Ser Arg Ser Ala Gly
            450                      455                      460
Asp Arg Trp Val Asp His Lys Pro Ala Ser Asn Met Gln Thr Glu Thr
465                      470                      475                      480
Val Met Gln Pro His Val Pro His Ala Ile Thr Val Ser Val Ala Asn
                    485                      490                      495
Glu Lys Ala Leu Ala Lys Cys Glu Lys Tyr Met Leu Thr His Gln Glu
                    500                      505                      510
Leu Ala Ser Asp Gly Glu Ile Glu Thr Lys Leu Ile Lys Gly Asp Ile
            515                      520                      525
Tyr Lys Thr Arg Gly Gly Gly Gln Ser Val Gln Phe Thr Asp Ile Glu
            530                      535                      540
Thr Leu Lys Gln Glu Ser Pro Asn Gly Ser Arg Lys Arg Arg Ser Ser
545                      550                      555                      560
Thr Val Ala Pro Ala Gln Pro Asp Gly Ala Glu Ser Glu Trp Thr Asp
                    565                      570                      575
Val Glu Thr Arg Cys Ser Val Ala Val Glu Met Arg Ala Gly Ser Gln
            580                      585                      590
Leu Gly Pro Gly Tyr Gln His His Ala Gln Pro Lys Arg Lys Lys Pro
            595                      600                      605         608
```


```
<210> 1152
<211> 111
<212>Amino acid
<213> Homo sapiens
```


```
<400> 1152
Pro Phe Ser Ser Ser Ser Val Ser Ser Lys Gly Ser Asp Pro Phe Gly
1               5                   10                  15
Thr Leu Asp Pro Phe Gly Ser Gly Ser Phe Asn Ser Ala Glu Gly Phe
            20                  25                  30
Ala Asp Phe Ser Gln Met Ser Lys Gly Lys Ser Thr Pro Val Ser Gln
        35                  40                  45
Leu Gly Ser Ala Asp Phe Pro Glu Ala Pro Asp Pro Phe Gln Pro Leu
    50                  55                  60
Gly Ala Asp Ser Gly Asp Pro Phe Gln Ser Lys Lys Gly Phe Gly Asp
65                  70                  75                  80
Pro Phe Ser Gly Lys Asp Pro Phe Val Pro Ser Ser Ala Ala Lys Pro
                85                  90                  95
Ser Lys Ala Ser Ala Ser Gly Phe Ala Asp Phe Thr Ser Val Ser
        100                 105                 110 111
```


```
<210> 1153
```

<211> 444
<212>Amino acid
<213> Homo sapiens

<400> 1153
Met Ser Leu Met Val Val Ser Met Ala Cys Val Gly Leu Phe Leu Val
1   5   10   15
Gln Arg Ala Gly Pro His Met Gly Gly Gln Asp Lys Pro Phe Leu Ser
            20   25   30
Ala Trp Pro Ser Ala Val Val Pro Arg Gly Gly His Val Thr Leu Arg
        35   40   45
Cys His Tyr Arg His Arg Phe Asn Asn Phe Met Leu Tyr Lys Glu Asp
    50   55   60
Arg Ile His Ile Pro Ile Phe His Gly Arg Ile Phe Gln Glu Ser Phe
65   70   75   80
Asn Met Ser Pro Val Thr Thr Ala His Ala Gly Asn Tyr Thr Cys Arg
                85   90   95
Gly Ser His Pro His Ser Pro Thr Gly Trp Ser Ala Pro Ser Asn Pro
            100   105   110
Val Val Ile Met Val Thr Gly Asn His Arg Lys Pro Ser Leu Leu Ala
        115   120   125
His Pro Gly Pro Leu Val Lys Ser Gly Glu Arg Val Ile Leu Gln Cys
    130   135   140
Trp Ser Asp Ile Met Phe Glu His Phe Phe Leu His Lys Glu Gly Ile
145   150   155   160
Ser Lys Asp Pro Ser Arg Leu Val Gly Gln Ile His Asp Gly Val Ser
                165   170   175
Lys Ala Asn Phe Ser Ile Gly Pro Met Met Gln Asp Leu Ala Gly Thr
            180   185   190
Tyr Arg Cys Tyr Gly Ser Val Thr His Ser Pro Tyr Gln Leu Ser Ala
        195   200   205
Pro Ser Asp Pro Leu Asp Ile Val Ile Thr Gly Leu Tyr Glu Lys Pro
    210   215   220
Ser Leu Ser Ala Gln Pro Gly Pro Thr Val Leu Ala Gly Glu Ser Val
225   230   235   240
Thr Leu Ser Cys Ser Ser Arg Ser Ser Tyr Asp Met Tyr His Leu Ser
                245   250   255
Arg Glu Gly Glu Ala His Glu Arg Arg Phe Ser Ala Gly Pro Lys Val
            260   265   270
Asn Gly Thr Phe Gln Ala Asp Phe Pro Leu Gly Pro Ala Thr His Gly
        275   280   285
Gly Thr Tyr Arg Cys Phe Gly Ser Phe Arg Asp Ser Pro Tyr Glu Trp
    290   295   300
Ser Asn Ser Ser Asp Pro Leu Leu Val Ser Val Thr Gly Asn Pro Ser
305   310   315   320
Asn Ser Trp Pro Ser Pro Thr Glu Pro Ser Ser Glu Thr Gly Asn Pro
            325   330   335
Arg His Leu His Val Leu Ile Gly Thr Ser Val Val Ile Ile Leu Phe
        340   345   350
Ile Leu Leu Leu Phe Phe Leu Leu His Arg Trp Cys Ser Asn Lys Lys
    355   360   365
Asn Ala Ala Val Met Asp Gln Glu Ser Ala Gly Asn Arg Thr Ala Asn
370   375   380
Ser Glu Asp Ser Asp Glu Gln Asp Pro Gln Glu Val Thr Tyr Thr Gln
385   390   395   400
Leu Asn His Cys Val Phe Thr Gln Arg Lys Ile Thr Arg Pro Ser Gln
            405   410   415
Arg Pro Lys Thr Pro Pro Thr Asp Ile Ile Val Tyr Thr Glu Leu Pro
        420   425   430
Asn Ala Glu Ser Arg Ser Lys Val Val Ser Cys Pro

```
                435                440                444
```

```
        <210> 1154
        <211> 522
        <212>Amino acid
        <213> Homo sapiens


        <400> 1154
Met Ser Leu Arg Val His Thr Leu Pro Thr Leu Leu Gly Ala Val Val
 1           5                10              15
Arg Pro Gly Cys Arg Glu Leu Leu Cys Leu Leu Met Ile Thr Val Thr
            20              25              30
Val Gly Pro Gly Ala Ser Gly Val Cys Pro Thr Ala Cys Ile Cys Ala
            35              40              45
Thr Asp Ile Val Ser Cys Thr Asn Lys Asn Leu Ser Lys Val Pro Gly
    50              55              60
Asn Leu Phe Arg Leu Ile Lys Arg Leu Asp Leu Ser Tyr Asn Arg Ile
 65              70              75              80
Gly Leu Leu Asp Ser Glu Trp Ile Pro Val Ser Phe Ala Lys Leu Asn
            85              90              95
Thr Leu Ile Leu Arg His Asn Asn Ile Thr Ser Ile Ser Thr Gly Ser
            100             105             110
Phe Ser Thr Thr Pro Asn Leu Lys Cys Leu Asp Leu Ser Ser Asn Lys
    115             120             125
Leu Lys Thr Val Lys Asn Ala Val Phe Gln Glu Leu Lys Val Leu Glu
    130             135             140
Val Leu Leu Leu Tyr Asn Asn His Ile Ser Tyr Leu Asp Pro Ser Ala
145             150             155             160
Phe Gly Gly Leu Ser Gln Leu Gln Lys Leu Tyr Leu Ser Gly Asn Phe
            165             170             175
Leu Thr Gln Phe Pro Met Asp Leu Tyr Val Gly Arg Phe Lys Leu Ala
            180             185             190
Glu Leu Met Phe Leu Asp Val Ser Tyr Asn Arg Ile Pro Ser Met Pro
    195             200             205
Met His His Ile Asn Leu Val Pro Gly Lys Gln Leu Arg Gly Ile Tyr
    210             215             220
Leu His Gly Asn Pro Phe Val Cys Asp Cys Ser Leu Val Ser Leu Leu
225             230             235             240
Val Phe Trp Tyr Arg Arg His Phe Ser Ser Val Met Asp Phe Lys Asn
            245             250             255
Asp Tyr Thr Cys Arg Leu Trp Ser Asp Ser Arg His Ser Arg Gln Val
            260             265             270
Leu Leu Leu Gln Asp Ser Phe Met Asn Cys Ser Asp Ser Ile Ile Asn
    275             280             285
Gly Ser Phe Arg Ala Leu Gly Phe Ile His Glu Ala Gln Val Gly Glu
    290             295             300
Arg Leu Met Val His Cys Asp Ser Lys Thr Gly Asn Ala Asn Thr Asp
305             310             315             320
Phe Ile Trp Val Gly Pro Asp Asn Arg Leu Leu Glu Pro Asp Lys Glu
            325             330             335
Met Glu Asn Phe Tyr Val Phe His Asn Gly Ser Leu Val Ile Glu Ser
            340             345             350
Pro Arg Phe Glu Asp Ala Gly Val Tyr Ser Cys Ile Ala Met Asn Lys
            355             360             365
Gln Arg Leu Leu Asn Glu Thr Val Asp Val Thr Ile Asn Val Ser Asn
    370             375             380
Phe Thr Val Ser Arg Ser His Ala His Glu Ala Phe Asn Thr Ala Phe
385             390             395             400
Thr Thr Leu Ala Ala Cys Val Ala Ser Ile Val Leu Val Leu Leu Tyr
```

```
                        405                    410                    415
Leu Tyr Leu Thr Pro Cys Pro Cys Lys Cys Lys Thr Lys Arg Gln Lys
                420                    425                    430
Asn Met Leu His Gln Ser Asn Ala His Ser Ser Ile Leu Ser Pro Gly
            435                    440                    445
Pro Ala Ser Asp Ala Ser Ala Asp Glu Arg Lys Ala Gly Ala Gly Lys
        450                    455                    460
Arg Val Val Phe Leu Glu Pro Leu Lys Asp Thr Ala Ala Gly Gln Asn
465                    470                    475                    480
Gly Lys Val Arg Leu Phe Pro Ser Glu Ala Val Ile Ala Glu Gly Ile
                485                    490                    495
Leu Lys Ser Thr Arg Gly Lys Ser Asp Ser Asp Ser Val Asn Ser Val
            500                    505                    510
Phe Ser Asp Thr Pro Phe Val Ala Ser Thr
        515                    520    522
```

```
        <210> 1155
        <211> 642
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1155
Ala Ser Asp Phe Ile Arg Ser Leu Asp His Cys Gly Tyr Leu Ser Leu
 1               5                    10                     15
Glu Gly Val Phe Ser His Lys Phe Asp Phe Glu Leu Gln Asp Val Ser
                20                    25                     30
Ser Val Asn Glu Asp Val Leu Leu Thr Thr Gly Leu Leu Cys Lys Tyr
            35                    40                     45
Thr Ala Gln Arg Phe Lys Pro Lys Tyr Lys Phe Phe His Lys Ser Phe
        50                    55                     60
Gln Glu Tyr Thr Ala Gly Arg Arg Leu Ser Ser Leu Leu Thr Ser His
65                    70                     75                     80
Glu Pro Glu Glu Val Thr Lys Gly Asn Gly Tyr Leu Gln Lys Met Val
                85                    90                     95
Ser Ile Ser Asp Ile Thr Ser Thr Tyr Ser Ser Leu Leu Arg Tyr Thr
                100                   105                    110
Cys Gly Ser Ser Val Glu Ala Thr Arg Ala Val Met Lys His Leu Ala
            115                   120                    125
Ala Val Tyr Gln His Gly Cys Leu Leu Gly Leu Ser Ile Ala Lys Arg
        130                   135                    140
Pro Leu Trp Arg Gln Glu Ser Leu Gln Ser Val Lys Asn Thr Thr Glu
145                   150                    155                    160
Gln Glu Ile Leu Lys Ala Ile Asn Ile Asn Ser Phe Val Glu Cys Gly
                165                   170                    175
Ile His Leu Tyr Gln Glu Ser Thr Ser Lys Ser Ala Leu Ser Gln Glu
                180                   185                    190
Phe Glu Ala Phe Phe Gln Gly Lys Ser Leu Tyr Ile Asn Ser Gly Asn
            195                   200                    205
Ile Pro Asp Tyr Leu Phe Asp Phe Phe Glu His Leu Pro Asn Cys Ala
        210                   215                    220
Ser Ala Leu Asp Phe Ile Lys Leu Gly Phe Tyr Gly Gly Ala Met Ala
225                   230                    235                    240
Ser Trp Glu Lys Ala Ala Glu Asp Thr Gly Gly Ile His Met Glu Glu
                245                   250                    255
Ala Pro Glu Thr Tyr Ile Pro Ser Arg Ala Val Ser Leu Phe Phe Asn
                260                   265                    270
Trp Lys Gln Glu Phe Arg Thr Leu Glu Val Thr Leu Arg Asp Phe Ser
            275                   280                    285
Lys Leu Asn Lys Gln Asp Ile Arg Tyr Leu Gly Lys Ile Phe Ser Ser
```

```
           290                    295                   300
Ala Thr Ser Leu Arg Leu Gln Ile Lys Arg Cys Ala Gly Val Ala Gly
305                    310                   315                   320
Ser Leu Ser Leu Val Leu Ser Thr Cys Lys Asn Ile Tyr Ser Leu Met
               325                   330                   335
Val Glu Ala Ser Pro Leu Thr Ile Glu Asp Glu Arg His Ile Thr Ser
               340                   345                   350
Val Thr Asn Leu Lys Thr Leu Ser Ile His Asp Leu Gln Asn Gln Arg
               355                   360                   365
Leu Pro Gly Gly Leu Thr Asp Ser Leu Gly Asn Leu Lys Asn Leu Thr
           370                    375                   380
Lys Leu Ile Met Asp Asn Ile Lys Met Asn Glu Glu Asp Ala Ile Lys
305                    390                   395                   400
Leu Ala Glu Gly Leu Lys Asn Leu Lys Lys Met Cys Leu Phe His Leu
               405                   410                   415
Thr His Leu Ser Asp Ile Gly Glu Gly Met Asp Tyr Ile Val Lys Ser
               420                   425                   430
Leu Ser Ser Glu Pro Cys Asp Leu Glu Glu Ile Gln Leu Val Ser Cys
               435                   440                   445
Cys Leu Ser Ala Asn Ala Val Lys Ile Leu Ala Gln Asn Leu His Asn
           450                    455                   460
Leu Val Lys Leu Ser Ile Leu Asp Leu Ser Glu Asn Tyr Leu Glu Lys
465                    470                   475                   480
Asp Gly Asn Glu Ala Leu His Glu Leu Ile Asp Arg Met Asn Val Leu
               485                   490                   495
Glu Gln Leu Thr Ala Leu Met Leu Pro Trp Gly Cys Asp Val Gln Gly
               500                   505                   510
Ser Leu Ser Ser Leu Leu Lys His Leu Glu Glu Val Pro Gln Leu Val
           515                    520                   525
Lys Leu Gly Leu Lys Asn Trp Arg Leu Thr Asp Thr Glu Ile Arg Ile
           530                    535                   540
Leu Gly Ala Phe Phe Gly Lys Asn Pro Leu Lys Asn Phe Gln Gln Leu
545                    550                   555                   560
Asn Leu Ala Gly Asn Arg Val Ser Ser Asp Gly Trp Leu Ala Phe Met
               565                   570                   575
Gly Val Phe Glu Asn Leu Lys Gln Leu Val Phe Phe Asp Phe Ser Thr
           580                    585                   590
Lys Glu Phe Leu Pro Asp Pro Ala Leu Val Arg Lys Leu Ser Gln Val
           595                    600                   605
Leu Ser Lys Leu Thr Phe Leu Gln Glu Ala Arg Leu Val Gly Trp Gln
           610                    615                   620
Phe Asp Asp Asp Asp Leu Ser Val Ile Thr Gly Ala Phe Lys Leu Val
625                    630                   635                   640
Thr Ala
642
```

```
    <210> 1156
    <211> 125
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(125)
    <223> X = any amino acid or stop code
```

```
    <400> 1156
Ala Ser Asp Arg Lys Val Ala Met Thr Cys Asp Cys Phe Trp Phe Arg
 1               5                   10                  15
```

```
Thr Met Leu Asp Gln His Ala Ser Cys Met Glu Val Gly Thr Glu Arg
         20                  25                  30
Glu Arg Gln Ala Gly Gly Leu Val Met Phe Asp Pro Ser Gly Phe Pro
         35                  40                  45
Thr Gly Glu Lys Val Leu Gln Asp Asp Glu Phe Thr Cys Asp Leu Phe
         50                  55                  60
Arg Phe Leu Gln Leu Leu Cys Glu Gly His Asn Ser Gly Leu Xaa Val
65                   70               75                      80
Pro Gly Thr Ser Asp Asp Thr Lys Ala Xaa Ile Met Phe Ser Ser Gln
                 85                  90                  95
Xaa Xaa Gln Glu Pro Val Ser Ser Asn Tyr Ala Ser Phe Xaa Arg Gln
         100                 105                 110
Gln Ile Ile Leu Glu His Gly Ser Ala Leu Gly Ser Gly
         115                 120                 125
```

```
<210> 1157
<211> 91
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(91)
<223> X = any amino acid or stop code
```

```
<400> 1157
Glu Ile Thr His Ile Val Gly Glu Thr Ala Ala Phe Leu Cys Pro Arg
1                5                  10                  15
Leu Arg Leu Arg Arg Gly Gly Lys Asp Gly Ser Pro Lys Pro Gly Phe
         20                  25                  30
Leu Ala Ser Val Ile Pro Val Asp Arg Arg Pro Gly Glu Xaa Asp Ile
         35                  40                  45
Thr His Ile Val Gly Glu Thr Ala Ala Phe Leu Cys Pro Arg Leu Arg
   50                  55                  60
Leu Arg Arg Gly Gly Lys Asp Gly Ser Pro Lys Pro Gly Phe Leu Ala
65                   70                  75                  80
Ser Val Ile Pro Val Asp Arg Arg Pro Gly Glu
                 85                  90  91
```

```
<210> 1158
<211> 254
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(254)
<223> X = any amino acid or stop code
```

```
<400> 1158
Ser Lys Phe Ile Phe Tyr Val Asp Ser Gln Ser Met Ile Phe Phe Phe
1                5                  10                  15
Gln Thr Pro Thr Arg His Lys Val Leu Ile Met Glu Phe Cys Pro Cys
         20                  25                  30
```

```
Gly Ser Leu Tyr Thr Val Leu Glu Glu Pro Ser Asn Ala Tyr Gly Leu
        35                  40                  45
Pro Glu Ser Glu Phe Leu Ile Val Leu Arg Asp Val Val Gly Gly Met
    50                  55                  60
Asn His Leu Arg Glu Asn Gly Ile Val His Arg Asp Ile Lys Pro Gly
65                  70                  75                  80
Asn Ile Met Arg Val Ile Gly Glu Asp Gly Gln Ser Val Tyr Lys Leu
                85                  90                  95
Thr Asp Phe Gly Ala Ala Arg Glu Leu Glu Asp Asp Glu Gln Phe Val
            100                 105                 110
Ser Leu Tyr Gly Thr Glu Glu Tyr Leu His Pro Asp Met Tyr Glu Arg
        115                 120                 125
Ala Val Leu Arg Lys Asp His Gln Lys Lys Tyr Gly Ala Thr Val Asp
    130                 135                 140
Leu Trp Ser Ile Gly Val Thr Phe Tyr Gln Gly Lys Pro Thr Gly Ser
145                 150                 155                 160
Leu Ala Ile Xaa His Pro Phe Glu Gly Ala Ser Val Arg Asn Lys Ala
                165                 170                 175
Ser Asp Gly Ile Lys Ile Ile Thr Gly Lys Gly Leu Leu Gly Ala Ile
            180                 185                 190
Ser Gly Val Gln Lys Ser Lys Lys Asn Gly Pro Ile Asp Trp Glu Trp
        195                 200                 205
Glu Asp Met Pro Val Ser Cys Ser Pro Ser Ser Gly Val Leu Arg Val
    210                 215                 220
Pro Asn Leu Pro Pro Val Leu Ala Asn Ile Leu Glu Ser Arg Ser Arg
225                 230                 235                 240
Lys Lys Cys Trp Gly Phe Xaa Pro Ser Phe Leu Gln Glu Asn
                245                 250                 254


        <210> 1159
        <211> 162
        <212>Amino acid
        <213> Homo sapiens




        <400> 1159
Gly Ser Thr Ile Ser Cys Glu Arg Ser Leu Arg Ser Leu Trp Thr Ala
1               5                   10                  15
His Trp Ala Leu Pro Glu Met Asp Ser Arg Ile Pro Tyr Asp Asp Tyr
            20                  25                  30
Pro Val Val Phe Leu Pro Ala Tyr Glu Asn Pro Pro Ala Trp Ile Pro
        35                  40                  45
Pro His Glu Arg Val His His Pro Asp Tyr Asn Asn Glu Leu Thr Gln
    50                  55                  60
Phe Leu Pro Arg Thr Ile Thr Leu Lys Lys Pro Pro Gly Ala Gln Leu
65                  70                  75                  80
Gly Phe Asn Ile Arg Gly Gly Lys Ala Ser Gln Leu Gly Ile Phe Ile
                85                  90                  95
Ser Lys Val Ile Pro Asp Ser Asp Ala His Arg Ala Gly Leu Gln Glu
                100                 105                 110
Gly Asp Gln Val Leu Ala Val Asn Asp Val Asp Phe Gln Asp Ile Glu
        115                 120                 125
His Ser Lys Ala Val Glu Ile Leu Lys Thr Ala Arg Glu Ile Ser Met
    130                 135                 140
Arg Val Arg Phe Phe Pro Tyr Asn Tyr His Arg Gln Lys Glu Arg Thr
145                 150                 155                 160
Val His
    162
```

```
<210> 1160
<211> 295
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1160
His Glu Gln Val Ser Ala Leu His Arg Arg Ile Lys Ala Ile Val Glu
1               5                   10                  15
Val Ala Ala Met Cys Gly Val Asn Ile Ile Cys Phe Gln Glu Ala Trp
            20                  25                  30
Thr Met Pro Phe Ala Phe Cys Thr Arg Glu Lys Leu Pro Trp Thr Glu
        35                  40                  45
Phe Ala Glu Ser Ala Glu Asp Gly Pro Thr Thr Arg Phe Cys Gln Lys
    50                  55                  60
Leu Ala Lys Asn His Asp Met Val Val Val Ser Pro Ile Leu Glu Arg
65                  70                  75                  80
Asp Ser Glu His Gly Asp Val Leu Trp Asn Thr Ala Val Val Ile Ser
                85                  90                  95
Asn Ser Gly Ala Val Leu Gly Lys Thr Arg Lys Asn His Ile Pro Arg
            100                 105                 110
Val Gly Asp Phe Asn Glu Ser Thr Tyr Tyr Met Glu Gly Asn Leu Gly
        115                 120                 125
His Pro Val Phe Gln Thr Gln Phe Gly Arg Ile Ala Val Asn Ile Cys
    130                 135                 140
Tyr Gly Arg His His Pro Leu Asn Trp Leu Met Tyr Ser Ile Asn Gly
145                 150                 155                 160
Ala Glu Ile Ile Phe Asn Pro Ser Ala Thr Ile Gly Ala Leu Ser Glu
                165                 170                 175
Ser Leu Trp Pro Ile Glu Ala Arg Asn Ala Ala Ile Ala Asn His Cys
            180                 185                 190
Phe Thr Cys Ala Ile Asn Arg Val Gly Thr Glu His Phe Pro Asn Glu
        195                 200                 205
Phe Thr Ser Gly Asp Gly Lys Lys Ala His Gln Asp Phe Gly Tyr Phe
    210                 215                 220
Tyr Gly Ser Ser Tyr Val Ala Ala Pro Asp Ser Ser Arg Thr Pro Gly
225                 230                 235                 240
Leu Ser Arg Ser Arg Asp Gly Leu Leu Val Ala Lys Leu Asp Leu Asn
            245                 250                 255
Leu Cys Gln Gln Val Asn Asp Val Trp Asn Phe Lys Met Thr Gly Arg
        260                 265                 270
Tyr Glu Met Tyr Ala Arg Glu Leu Ala Glu Ala Val Lys Ser Asn Tyr
    275                 280                 285
Ser Pro Thr Ile Val Lys Glu
290                 295
```

```
<210> 1161
<211> 1621
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(1621)
<223> X = any amino acid or stop code
```

```
      <400> 1161
Met Ala Lys Ser Gly Gly Cys Gly Ala Gly Ala Gly Val Gly Gly Gly
1               5               10              15
Asn Gly Ala Leu Thr Trp Val Asn Asn Ala Ala Lys Lys Glu Glu Ser
            20              25              30
Glu Thr Ala Asn Lys Asn Asp Ser Ser Lys Lys Leu Ser Val Glu Arg
        35              40              45
Val Tyr Gln Lys Lys Thr Gln Leu Glu His Ile Leu Leu Arg Pro Asp
    50              55              60
Thr Tyr Ile Gly Ser Val Glu Pro Leu Thr Gln Phe Met Trp Val Tyr
65              70              75              80
Asp Glu Asp Val Gly Met Asn Cys Arg Glu Val Thr Phe Val Pro Gly
            85              90              95
Leu Tyr Lys Ile Phe Asp Glu Ile Leu Val Asn Ala Ala Asp Asn Lys
        100             105             110
Gln Arg Asp Lys Asn Met Thr Cys Ile Lys Val Ser Ile Asp Pro Glu
    115             120             125
Ser Asn Ile Ile Ser Ile Trp Asn Asn Gly Lys Gly Ile Pro Val Val
    130             135             140
Glu His Lys Val Glu Lys Val Tyr Val Pro Ala Leu Ile Phe Gly Gln
145             150             155             160
Leu Leu Thr Ser Ser Asn Tyr Asp Asp Asp Glu Lys Lys Val Thr Gly
            165             170             175
Gly Arg Asn Gly Tyr Gly Ala Lys Leu Cys Asn Ile Phe Ser Thr Lys
        180             185             190
Phe Thr Val Glu Thr Ala Cys Lys Glu Tyr Lys His Ser Phe Lys Gln
    195             200             205
Thr Trp Met Asn Asn Met Met Lys Thr Ser Glu Ala Lys Ile Lys His
    210             215             220
Phe Asp Gly Glu Asp Tyr Thr Cys Ile Thr Phe Gln Pro Asp Leu Ser
225             230             235             240
Lys Phe Lys Met Glu Lys Leu Asp Lys Asp Ile Val Ala Leu Met Thr
            245             250             255
Arg Arg Ala Tyr Asp Leu Ala Gly Ser Cys Arg Gly Val Lys Val Met
        260             265             270
Phe Asn Gly Lys Lys Leu Pro Val Asn Gly Phe Arg Ser Tyr Val Asp
        275             280             285
Leu Tyr Val Lys Asp Lys Leu Asp Glu Thr Gly Val Ala Leu Lys Val
    290             295             300
Ile His Glu Leu Ala Asn Glu Arg Trp Asp Val Cys Leu Thr Leu Ser
305             310             315             320
Glu Lys Gly Phe Gln Gln Ile Ser Phe Val Asn Ser Ile Ala Thr Thr
            325             330             335
Lys Gly Gly Arg His Val Asp Tyr Val Val Asp Gln Val Val Gly Lys
        340             345             350
Leu Ile Glu Val Val Lys Lys Lys Asn Lys Ala Gly Val Ser Val Lys
    355             360             365
Pro Phe Gln Val Lys Asn His Ile Trp Val Phe Ile Asn Cys Leu Ile
370             375             380
Glu Asn Pro Thr Phe Asp Ser Gln Thr Lys Glu Asn Met Thr Leu Gln
385             390             395             400
Pro Lys Ser Phe Gly Ser Lys Cys Gln Leu Ser Glu Lys Phe Phe Lys
            405             410             415
Ala Ala Ser Asn Cys Gly Ile Val Glu Ser Ile Leu Asn Trp Val Lys
        420             425             430
Phe Lys Ala Gln Thr Gln Leu Asn Lys Lys Cys Ser Ser Val Lys Tyr
        435             440             445
Ser Lys Ile Lys Gly Ile Pro Lys Leu Asp Asp Ala Asn Asp Ala Gly
    450             455             460
Gly Lys His Ser Leu Glu Cys Thr Leu Ile Leu Thr Glu Gly Asp Ser
465             470             475             480
Ala Lys Ser Leu Ala Val Ser Gly Leu Gly Val Ile Gly Arg Asp Arg
            485             490             495
Tyr Gly Val Phe Pro Leu Arg Gly Lys Ile Leu Asn Val Arg Glu Ala
```

```
                    500                 505                 510
Ser His Lys Gln Ile Met Glu Asn Ala Glu Ile Asn Asn Ile Ile Lys
        515                 520                 525
Ile Val Gly Leu Gln Tyr Lys Lys Ser Tyr Asp Asp Ala Gln Ser Leu
    530                 535                 540
Lys Thr Leu Arg Tyr Gly Lys Ile Met Ile Met Thr Asp Gln Asp Gln
545                 550                 555                 560
Asp Gly Ser His Ile Lys Gly Leu Leu Ile Asn Phe Ile His His Asn
            565                 570                 575
Trp Pro Ser Leu Leu Lys His Gly Phe Leu Glu Glu Phe Ile Thr Pro
        580                 585                 590
Ile Val Lys Ala Ser Lys Asn Lys Gln Glu Leu Ser Phe Tyr Ser Ile
        595                 600                 605
Pro Glu Phe Asp Glu Trp Lys Lys His Ile Glu Asn Gln Lys Ala Trp
    610                 615                 620
Lys Ile Lys Tyr Tyr Lys Gly Leu Gly Thr Ser Thr Ala Lys Glu Ala
625                 630                 635                 640
Lys Glu Tyr Phe Ala Asp Met Glu Arg His Arg Ile Leu Phe Arg Tyr
            645                 650                 655
Ala Gly Pro Glu Asp Asp Ala Ala Ile Thr Leu Ala Phe Ser Lys Lys
            660                 665                 670
Lys Ile Asp Asp Arg Lys Glu Trp Leu Thr Asn Phe Met Glu Asp Arg
        675                 680                 685
Arg Gln Arg Arg Leu His Gly Leu Pro Glu Gln Phe Leu Tyr Gly Thr
    690                 695                 700
Ala Thr Lys His Leu Thr Tyr Asn Asp Phe Ile Asn Lys Glu Leu Ile
705                 710                 715                 720
Leu Phe Ser Asn Ser Asp Asn Glu Arg Ser Ile Pro Ser Leu Val Asp
            725                 730                 735
Gly Phe Lys Pro Gly Gln Arg Lys Val Leu Phe Thr Cys Phe Lys Arg
        740                 745                 750
Asn Asp Lys Arg Glu Val Lys Val Ala Gln Leu Ala Gly Ser Val Ala
        755                 760                 765
Glu Met Ser Ala Tyr His His Gly Glu Gln Ala Leu Met Met Thr Ile
770                 775                 780
Val Asn Leu Ala Gln Asn Phe Val Gly Ser Asn Asn Ile Asn Leu Leu
785                 790                 795                 800
Gln Pro Ile Gly Gln Phe Gly Thr Arg Leu His Gly Gly Lys Asp Ala
            805                 810                 815
Ala Ser Pro Arg Tyr Ile Phe Thr Met Leu Ser Thr Leu Ala Arg Leu
        820                 825                 830
Leu Phe Pro Ala Val Asp Asp Asn Leu Leu Lys Phe Leu Tyr Asp Asp
        835                 840                 845
Asn Gln Arg Val Glu Pro Glu Trp Tyr Ile Pro Ile Ile Pro Met Val
    850                 855                 860
Leu Ile Asn Gly Ala Glu Gly Ile Gly Thr Gly Trp Ala Cys Lys Leu
865                 870                 875                 880
Pro Asn Tyr Asp Ala Arg Glu Ile Val Asn Asn Val Arg Arg Met Leu
            885                 890                 895
Asp Gly Leu Asp Pro His Pro Met Leu Pro Asn Tyr Lys Asn Phe Lys
        900                 905                 910
Gly Thr Ile Gln Glu Leu Gly Gln Asn Gln Tyr Ala Val Ser Gly Glu
        915                 920                 925
Ile Phe Val Val Asp Arg Asn Thr Val Glu Ile Thr Glu Leu Pro Val
    930                 935                 940
Arg Thr Trp Thr Gln Val Tyr Lys Glu Gln Val Leu Glu Pro Met Leu
945                 950                 955                 960
Asn Gly Thr Asp Lys Thr Pro Ala Leu Ile Ser Asp Tyr Lys Glu Tyr
            965                 970                 975
His Thr Asp Thr Thr Val Lys Phe Val Val Lys Met Thr Glu Glu Lys
        980                 985                 990
Leu Ala Gln Ala Glu Ala Ala Gly Leu His Lys Val Phe Lys Leu Gln
    995                 1000                1005
Thr Thr Leu Thr Cys Asn Ser Met Val Leu Phe Asp His Met Gly Cys
```

```
              1010              1015              1020
     Leu Lys Lys Tyr Glu Thr Val Gln Asp Ile Leu Lys Glu Phe Phe Asp
1025              1030              1035              1040
     Leu Arg Leu Ser Tyr Tyr Gly Leu Arg Lys Glu Trp Leu Val Gly Met
                  1045              1050              1055
     Leu Gly Ala Glu Phe Thr Lys Leu Asn Asn Gln Ala Arg Phe Ile Leu
                  1060              1065              1070
     Glu Lys Ile Gln Gly Lys Ile Thr Ile Xaa Asn Arg Ser Lys Lys Asp
              1075              1080              1085
     Leu Ile Gln Met Leu Val Gln Arg Gly Tyr Glu Ser Asp Pro Val Lys
        - 1090              1095              1100
     Ala Trp Lys Glu Ala Gln Glu Lys Ala Ala Glu Glu Asp Glu Thr Gln
1105              1110              1115              1120
     Asn Gln His Asp Asp Ser Ser Ser Asp Ser Gly Thr Pro Ser Gly Pro
                  1125              1130              1135
     Asp Phe Asn Tyr Ile Leu Asn Met Ser Leu Trp Ser Leu Thr Lys Glu
                  1140              1145              1150
     Lys Val Glu Glu Leu Ile Lys Gln Arg Asp Ala Lys Gly Arg Glu Val
              1155              1160              1165
     Asn Asp Leu Lys Arg Lys Ser Pro Ser Asp Leu Trp Lys Glu Asp Leu
        1170              1175              1180
     Ala Ala Phe Val Glu Glu Leu Asp Lys Val Glu Ser Gln Glu Arg Glu
1185              1190              1195              1200
     Asp Val Leu Ala Gly Met Ser Gly Lys Ala Ile Lys Gly Lys Val Gly
                  1205              1210              1215
     Lys Pro Lys Val Lys Lys Leu Gln Leu Glu Glu Thr Met Pro Ser Pro
              1220              1225              1230
     Tyr Gly Arg Arg Ile Ile Pro Glu Ile Thr Ala Met Lys Ala Asp Ala
              1235              1240              1245
     Ser Lys Lys Leu Leu Lys Lys Lys Gly Asp Leu Asp Thr Ala Ala
        1250             1255              1260
     Val Lys Val Glu Phe Asp Glu Glu Phe Ser Gly Ala Pro Val Glu Gly
1265              1270              1275              1280
     Ala Gly Glu Glu Ala Leu Thr Pro Ser Val Pro Ile Asn Lys Gly Pro
                  1285              1290              1295
     Lys Pro Lys Arg Glu Lys Lys Glu Pro Gly Thr Arg Val Arg Lys Thr
              1300              1305              1310
     Pro Thr Ser Ser Gly Lys Pro Ser Ala Lys Lys Val Lys Lys Arg Asn
              1315              1320              1325
     Pro Trp Ser Asp Asp Glu Ser Lys Ser Glu Ser Asp Leu Glu Glu Thr
       . 1330              1335              1340
     Glu Pro Val Val Ile Pro Arg Asp Ser Leu Leu Arg Arg Ala Ala Ala
1345 '            1350              1355              1360
     Glu Arg Pro Lys Tyr Thr Phe Asp Phe Ser Glu Glu Glu Asp Asp Asp·
                  1365              1370              1375
     Ala Asp Asp Asp Asp Asp Asn Asn Asp Leu Glu Glu Leu Lys Val
              1380              1385              1390
     Lys Ala Ser Pro Ile Thr Asn Asp Gly Glu Asp Glu Phe Val Pro Ser
        1395              1400              1405
     Asp Gly Leu Asp Lys Asp Glu Tyr Thr Phe Ser Pro Gly Lys Ser Lys
        1410              1415              1420
     Ala Thr Pro Glu Lys Ser Leu His Asp Lys Lys Ser Gln Asp Phe Gly
1425              1430              1435              1440
     Asn Leu Phe Ser Phe Pro Ser Tyr Ser Gln Lys Ser Glu Asp Asp Ser
                  1445              1450              1455
     Ala Lys Phe Asp Ser Asn Glu Glu Asp Ser Ala Ser Val Phe Ser Pro
              1460              1465              1470
     Ser Phe Gly Leu Lys Gln Thr Asp Lys Val Pro Ser Lys Thr Val Ala
        1475              1480              1485
     Ala Lys Lys Gly Lys Pro Ser Ser Asp Thr Val Pro Lys Pro Lys Arg
        1490              1495              1500
     Ala Pro Lys Gln Lys Lys Val Val Glu Ala Val Asn Ser Asp Ser Asp
1505              1510              1515              1520
     Ser Glu Phe Gly Ile Pro Lys Lys Thr Thr Thr Pro Lys Gly Lys Gly
```

```
                    1525                    1530                    1535
Arg Gly Ala Lys Lys Arg Lys Ala Ser Gly Ser Glu Asn Glu Gly Asp
               1540                    1545                    1550
Tyr Asn Pro Gly Arg Lys Thr Ser Lys Thr Thr Ser Lys Lys Pro Lys
          1555                    1560                    1565
Lys Thr Ser Phe Asp Gln Asp Ser Asp Val Asp Ile Phe Pro Ser Asp
       1570                    1575                    1580
Phe Pro Thr Glu Pro Pro Ser Leu Pro Arg Thr Gly Arg Ala Arg Lys
1585                    1590                    1595                    1600
Glu Val Lys Tyr Phe Ala Glu Ser Asp Glu Glu Asp Asp Val Asp
               1605                    1610                    1615
Phe Ala Met Phe Asn
          16201621
```

```
<210> 1162
<211> 73
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(73)
<223> X = any amino acid or stop code
```

```
<400> 1162
Lys Gly Cys Leu Ala Ala Ser Phe Asn Cys Ile Phe Leu Tyr Thr Gly
1               5                   10                  15
Glu Leu Tyr Pro Thr Met Ile Arg Xaa Val Glu Ala Xaa Trp Glu Asn
          20                  25                  30
Asp Ser Leu Phe Leu Gly Lys Asp Ile Leu Leu Cys Thr Gly Gln Thr
          35                  40                  45
Pro Glu Leu Asn Gln Val His Pro Ser Pro Lys Ala Pro Pro Asn Thr
       50                  55                  60
His His Cys Lys Ala His Ser Ser His
65                  70                  73
```

```
<210> 1163
<211> 336
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1163
Glu Asn Ser Phe Glu Cys Lys Asp Cys Gly Lys Ala Phe Ser Arg Gly
1               5                   10                  15
Tyr Gln Leu Ser His His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr
          20                  25                  30
Glu Cys Lys Glu Cys Lys Lys Ala Phe Arg Trp Gly Asn Gln Leu Thr
          35                  40                  45
Gln His Gln Lys Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Asp
       50                  55                  60
Cys Gly Lys Ala Phe Arg Trp Gly Ser Ser Leu Val Ile His Lys Arg
65                  70                  75                  80
Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Lys Asp Cys Gly Lys Ala
               85                  90                  95
```

```
Phe Arg Arg Gly Asp Glu Leu Thr Gln His Gln Arg Phe His Thr Gly
            100                     105                     110
Glu Lys Asp Tyr Glu Cys Lys Asp Cys Gly Lys Thr Phe Ser Arg Val
        115                     120                     125
Tyr Lys Leu Ile Gln His Lys Arg Ile His Ser Gly Glu Lys Pro Tyr
    130                     135                     140
Glu Cys Lys Asp Cys Gly Lys Ala Phe Ile Cys Gly Ser Ser Leu Ile
145                     150                     155                 160
Gln His Lys Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Gln Glu
                165                     170                     175
Cys Gly Lys Ala Phe Thr Arg Val Asn Tyr Leu Thr Gln His Gln Lys
        180                     185                     190
Ile His Thr Gly Glu Lys Pro His Glu Cys Lys Glu Cys Gly Lys Ala
    195                     200                     205
Phe Arg Trp Gly Ser Ser Leu Val Lys His Glu Arg Ile His Thr Gly
    210                     215                     220
Glu Lys Pro Tyr Lys Cys Thr Glu Cys Gly Lys Ala Phe Asn Cys Gly
225                     230                     235                 240
Tyr His Leu Thr Gln His Glu Arg Ile His Thr Gly Glu Thr Pro Tyr
                245                     250                     255
Lys Cys Lys Glu Cys Gly Lys Ala Phe Ile Tyr Gly Ser Ser Leu Val
        260                     265                     270
Lys His Glu Arg Ile His Thr Gly Val Lys Pro Tyr Gly Cys Thr Glu
    275                     280                     285
Cys Gly Lys Ser Phe Ser His Gly His Gln Leu Thr Gln His Gln Lys
    290                     295                     300
Thr His Ser Gly Ala Lys Ser Tyr Glu Cys Lys Glu Cys Gly Lys Ala
305                     310                     315                 320
Cys Asn His Leu Asn His Leu Arg Glu His Gln Arg Ile His Asn Ser
                325                     330                     335 336
```

```
<210> 1164
<211> 118
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(118)
<223> X = any amino acid or stop code




<400> 1164
His Gln Tyr Leu Asp Asp Leu Tyr Pro Leu His Val Met Thr Ile Leu
1               5                   10                  15
Leu Lys Ser His Phe Phe Thr Met Leu Lys Arg Pro Val Gly Ser Ser
            20                  25                  30
Ser Phe Ala Ser Leu Pro Phe Tyr His Gln Ser Ile Leu Leu Arg Lys
        35                  40                  45
Asn Gln Met Lys Arg Lys Lys Thr Gln Gln Asp Leu Thr His Ile Asn
    50                  55                  60
Trp Thr Leu Gln Ala Val Ser Ile Gln Thr Cys Ile Trp Leu Gln Lys
65                  70                  75                  80
Lys Pro Ser Ser Tyr Phe His Gln Leu Pro Asn Gln Val Leu Xaa Pro
                85                  90                  95
Glu Asn Ser Gly Pro Glu Ser Cys Leu Tyr Asp Leu Ala Ala Val Val
            100                     105                     110
Val His His Gly Ser Gly
```

693

115   118

<210> 1165
<211> 146
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(146)
<223> X = any amino acid or stop code

<400> 1165
Xaa Leu Asp Pro Asp Thr Leu Pro Ala Val Ala Thr Leu Leu Met Asp
1   5   10   15
Val Met Phe Tyr Ser Asn Gly Val Lys Asp Pro Met Ala Thr Gly Asp
            20   25   30
Asp Cys Gly His Ile Arg Phe Phe Ser Phe Ser Leu Ile Glu Gly Tyr
        35   40   45
Ile Ser Leu Val Met Asp Val Gln Thr Gln Gln Arg Phe Pro Ser Asn
    50   55   60
Leu Leu Phe Thr Ser Ala Ser Gly Glu Leu Trp Lys Met Val Arg Ile
65   70   75   80
Gly Gly Gln Pro Leu Gly Phe Gly Pro Val Trp Glu Ser Gly Pro Thr
            85   90   95
Gly Pro Thr Ser Pro Leu Ile Leu Pro Val Thr Pro Ser Ser Ser His
            100   105   110
Arg Gln Ala Ala Ser Gln Val Thr Thr Thr Lys Gln Gly Gln Trp Leu
        115   120   125
Cys Leu Lys Arg Pro Ser Ala Arg Ser Pro Asp His Thr Ala Cys Leu
    130   135   140
Gly   *
145

<210> 1166
<211> 84
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(84)
<223> X = any amino acid or stop code

<400> 1166
Glu Ala Pro Leu Thr Ser Val Cys Phe Ser Leu Glu Arg Arg Phe Gly
1   5   10   15
Ser Ser Ser Asn Thr Thr Ser Phe Gly Thr Leu Ala Ser Gln Asn Ala
            20   25   30
Pro Thr Phe Gly Ser Leu Ser Gln Gln Thr Ser Gly Phe Gly Thr Gln
        35   40   45
Ser Ser Gly Phe Ser Gly Phe Gly Ser Gly Thr Gly Gly Phe Ser Phe
    50   55   60
Gly Ser Asn Asn Ser Xaa Val Ser Pro Phe Leu Ser Leu Thr Leu Ile

694

```
65                    70              75              80
Lys Ser Ile Lys
             84


    <210> 1167
    <211> 112
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(112)
    <223> X = any amino acid or stop code




    <400> 1167
Glu Glu Pro Gln Gly Ser Pro Ile Trp Val Trp Leu Ala Gly Ser Leu
 1               5               10              15
Thr Ser Val Ser Cys Phe Leu Pro Phe Gln Arg Met Arg Ile Lys Pro
            20              25              30
His Gln Gly Gln Tyr Ile Gly Glu Met Ser Phe Leu Gln His His Lys
        35              40              45
Gly Glu Cys Arg Pro Gln Lys Asp Xaa Ala Arg Gln Glu Asn Pro Cys
    50              55              60
Gly Pro Cys Ser Glu Arg Arg Lys His Leu Leu Gly Gln Asp Pro Lys
65              70              75              80
Thr Cys Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg
            85              90              95
Pro Leu Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
            100             105             110     112




    <210> 1168
    <211> 319
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(319)
    <223> X = any amino acid or stop code




    <400> 1168
Thr Leu Trp Ala Gly Pro Gly Leu Cys Pro Gln Ser His Ser Ser Ser
 1               5               10              15
Ser Val Pro Ala Pro Trp Glu Pro His Val Glu Arg Ala Leu Arg Thr
            20              25              30
Asp Arg Asn Gln Gly Gln Arg Pro Leu Leu Ser Ala Ser Trp Ala Pro
        35              40              45
Ala Pro Ala Arg Pro Leu Phe Leu Thr Ser Pro Val Leu Leu Pro Lys
    50              55              60
Ser Arg Ala Ile Pro Ala Ala Arg Asp Pro Ser Xaa Ala Gly Ile Phe
65              70              75              80
Cys Leu Leu Glu Met Ala Gly Gly Gln Ala Ser Val Val Ile Ile Gly
```

```
                            85                      90                      95
Ser Ala Gly Val Leu Gly Cys Arg Trp Gly Ser Ser Gly Lys Ser His
               100                     105                     110
Ser Leu Ser Pro Ser Arg Lys Gly Asn Leu His Leu Leu Ser Gln Glu
           115                     120                     125
Pro Gln Thr Thr Val Val His Asn Ala Thr Asp Gly Ile Lys Gly Ser
       130                     135                     140
Thr Glu Ser Cys Asn Thr Thr Glu Asp Glu Asp Leu Lys Val Arg
145                     150                     155                     160
Lys Gln Glu Ile Ile Lys Ile Thr Glu Gln Leu Ile Glu Ala Ile Asn
                   165                     170                     175
Asn Gly Asp Phe Glu Ala Tyr Thr Lys Ile Cys Asp Pro Gly Leu Thr
               180                     185                     190
Ser Phe Glu Pro Glu Ala Leu Gly Asn Leu Val Glu Gly Met Asp Phe
           195                     200                     205
His Lys Phe Tyr Phe Glu Asn Arg Glu Trp Val Arg Ala Ala Asp Ile
       210                     215                     220
Leu Leu Pro Ala Pro Leu Pro Leu Cys Leu Cys Leu Leu Leu Thr Phe
225                     230                     235                     240
Ser Ser Gln Leu Pro Thr Phe Pro Leu Phe Asp Leu Arg Ala Ala Leu
                   245                     250                     255
Leu Leu Cys Met Leu Val Pro Leu Cys Pro Asp Gly Cys Arg Gln Ala
               260                     265                     270
Pro Leu Lys Ala Leu Leu Leu Ser Ser Lys Cys His Ser Phe Cys Ser
           275                     280                     285
Cys Phe Val Ala Val Pro Val Thr Thr Ile Lys Leu Thr Tyr Phe Leu
       290                     295                     300
Pro Gly Ala Val Ala Tyr Ala Cys Asn Pro Asn Thr Leu Gly Gly
305                     310                     315                     319
```

```
        <210> 1169
        <211> 96
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1169
Glu Arg Ala Gly Ala Gly Gly Ala Ala Ala Cys Arg Ala Gly Thr Arg
 1               5                      10                      15
Ser Gly Ala Thr Ser Arg Thr Pro Trp Pro Leu His Arg Gln Leu Ser
           20                      25                      30
Met Met Leu Met Leu Ala Gln Ser Asn Pro Gln Leu Phe Ala Leu Met
       35                      40                      45
Gly Thr Arg Ala Gly Ile Ala Arg Glu Leu Glu Arg Val Glu Gln Gln
   50                      55                      60
Ser Arg Leu Glu Gln Leu Ser Ala Ala Glu Leu Gln Ser Arg Asn Gln
65                      70                      75                      80
Gly His Trp Ala Asp Trp Leu Gln Ala Tyr Arg Ala Arg Leu Gly Gln
               85                      90                      95  96
```

```
        <210> 1170
        <211> 145
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

```
<222> (1)...(145)
<223> X = any amino acid or stop code




<400> 1170
Asn Gly Thr Leu Phe Ile Met Val Met His Ile Lys Asp Leu Val Ser
1               5                   10                  15
Asp Tyr Lys Glu Xaa Trp Leu Xaa Arg Lys Pro Leu Pro Trp Xaa Glu
            20                  25                  30
Ala Leu Leu Leu Arg Asp Cys Phe Phe Phe Xaa Val Thr Glu Asn Gly
        35                  40                  45
Ala Asp Pro Asn Pro Tyr Val Lys Thr Tyr Leu Leu Pro Asp Asn His
    50                  55                  60
Lys Thr Ser Lys Arg Lys Thr Lys Ile Ser Arg Lys Thr Arg Asn Pro
65                  70                  75                  80
Thr Phe Asn Glu Met Leu Val Tyr Ser Gly Tyr Ser Lys Glu Thr Leu
                85                  90                  95
Arg Gln Arg Glu Leu Gln Leu Ser Val Leu Ser Ala Glu Ser Leu Arg
            100                 105                 110
Glu Asn Phe Phe Leu Gly Gly Val Thr Leu Pro Leu Lys Asp Phe Asn
        115                 120                 125
Leu Ser Lys Glu Thr Val Lys Trp Tyr Gln Leu Thr Ala Ala Thr Tyr
130                 135                 140
Leu
145




<210> 1171
<211> 464
<212> Amino acid
<213> Homo sapiens




<400> 1171
Leu His Arg Ile Met Gln Leu Ala Val Val Val Ser Gln Val Leu Glu
1               5                   10                  15
Asn Gly Ser Ser Val Leu Val Cys Leu Glu Glu Gly Trp Asp Ile Thr
            20                  25                  30
Ala Gln Val Thr Ser Leu Val Gln Leu Leu Ser Asp Pro Phe Tyr Arg
        35                  40                  45
Thr Leu Glu Gly Phe Gln Met Leu Val Glu Lys Glu Trp Leu Ser Phe
    50                  55                  60
Gly His Lys Phe Ser Gln Arg Ser Ser Leu Thr Leu Asn Cys Gln Gly
65                  70                  75                  80
Ser Gly Phe Ala Pro Val Phe Leu Gln Phe Leu Asp Cys Val His Gln
                85                  90                  95
Val His Asn Gln Tyr Pro Thr Glu Phe Glu Phe Asn Leu Tyr Tyr Leu
            100                 105                 110
Lys Phe Leu Ala Phe His Tyr Val Ser Asn Arg Phe Lys Thr Phe Leu
        115                 120                 125
Leu Asp Ser Asp Tyr Glu Arg Leu Glu His Gly Thr Leu Phe Asp Asp
130                 135                 140
Lys Gly Glu Lys His Ala Lys Lys Gly Val Cys Ile Trp Glu Cys Ile
145                 150                 155                 160
Asp Arg Met His Lys Arg Ser Pro Ile Phe Phe Asn Tyr Leu Tyr Ser
                165                 170                 175
Pro Leu Glu Ile Glu Ala Leu Lys Pro Asn Val Asn Val Ser Ser Leu
            180                 185                 190
```

```
Lys Lys Trp Asp Tyr Tyr Ile Glu Glu Thr Leu Ser Thr Gly Pro Ser
        195                 200                 205
Tyr Asp Trp Met Met Leu Thr Pro Lys His Phe Pro Ser Glu Asp Ser
    210                 215                 220
Asp Leu Ala Gly Glu Ala Gly Pro Arg Ser Gln Arg Arg Thr Val Trp
225                 230                 235                 240
Pro Cys Tyr Asp Asp Val Ser Cys Thr Gln Pro Asp Ala Leu Thr Ser
            245                 250                 255
Leu Phe Ser Glu Ile Glu Lys Leu Glu His Lys Leu Asn Gln Ala Pro
            260                 265                 270
Glu Lys Trp Gln Gln Leu Trp Glu Arg Val Thr Val Asp Leu Lys Glu
        275                 280                 285
Glu Pro Arg Thr Asp Arg Ser Gln Arg His Leu Ser Arg Ser Pro Gly
        290                 295                 300
Ile Val Ser Thr Asn Leu Pro Ser Tyr Gln Lys Arg Ser Leu Leu His
305                 310                 315                 320
Leu Pro Asp Ser Ser Met Gly Glu Glu Gln Asn Ser Ser Ile Ser Pro
            325                 330                 335
Ser Asn Gly Val Glu Arg Arg Ala Ala Thr Leu Tyr Ser Gln Tyr Thr
            340                 345                 350
Ser Lys Asn Asp Glu Asn Arg Ser Phe Glu Gly Thr Leu Tyr Lys Arg
        355                 360                 365
Gly Ala Leu Leu Lys Gly Trp Lys Pro Arg Trp Phe Val Leu Asp Val
370                 375                 380
Thr Lys His Gln Leu Arg Tyr Tyr Asp Ser Gly Glu Asp Thr Ser Cys
385                 390                 395                 400
Lys Gly His Ile Asp Leu Ala Glu Val Glu Met Val Ile Pro Ala Gly
            405                 410                 415
Pro Ser Met Gly Ala Pro Lys His Thr Ser Asp Lys Ala Phe Phe Asp
            420                 425                 430
Leu Lys Thr Ser Lys Arg Val Tyr Asn Phe Cys Ala Gln Asp Gly Gln
        435                 440                 445
Ser Ala Gln Gln Trp Met Asp Lys Ile Gln Ser Cys Ile Ser Asp Ala
    450                 455                 460                 464
```

<210> 1172
<211> 256
<212> Amino acid
<213> Homo sapiens

<400> 1172
```
Glu Val Glu Gly Pro Arg Arg Val Ser Pro Ala Pro Glu Thr Leu Gly
 1               5               10                  15
Met Glu Glu Ser Val Val Arg Pro Ser Val Phe Val Val Asp Gly Gln
            20              25                  30
Thr Asp Ile Pro Phe Thr Arg Leu Gly Arg Ser His Arg Arg Gln Ser
        35              40                  45
Cys Ser Val Ala Arg Val Gly Leu Gly Leu Leu Leu Leu Met Gly
    50              55                  60
Ala Gly Leu Ala Val Gln Gly Trp Phe Leu Leu Gln Leu His Trp Arg
65              70                  75                  80
Leu Gly Glu Met Val Thr Arg Leu Pro Asp Gly Pro Ala Gly Ser Trp
            85              90                  95
Glu Gln Leu Ile Gln Glu Arg Arg Ser His Glu Val Asn Pro Ala Ala
            100                 105                 110
His Leu Thr Gly Ala Asn Ser Ser Leu Thr Gly Ser Gly Gly Pro Leu
        115                 120                 125
```

698

```
Leu Trp Glu Thr Gln Leu Gly Leu Ala Phe Leu Arg Gly Leu Ser Tyr
    130               135               140
His Asp Gly Ala Leu Val Val Thr Lys Ala Gly Tyr Tyr Tyr Ile Tyr
145               150               155               160
Ser Lys Val Gln Leu Gly Gly Val Gly Cys Pro Leu Gly Leu Ala Ser
              165               170               175
Thr Ile Thr His Gly Leu Tyr Lys Arg Thr Pro Arg Tyr Pro Glu Glu
          180               185               190
Leu Glu Leu Leu Val Ser Gln Gln Ser Pro Cys Gly Arg Ala Thr Ser
    195               200               205
Ser Ser Arg Val Trp Trp Asp Ser Ser Phe Leu Gly Gly Val Val His
    210               • 215               220
Leu Glu Ala Gly Glu Glu Val Val Val Arg Val Leu Asp Glu Arg Leu
225               230               235               240
Val Arg Leu Arg Asp Gly Thr Arg Ser Tyr Phe Gly Ala Phe Met Val
              245               250               255 256
```

```
<210> 1173
<211> 117
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(117)
<223> X = any amino acid or stop code
```

```
<400> 1173
Gln Ser Ala Glu Leu Gly Pro Arg Arg Arg Glu Gly Ser Arg Arg Pro
1               5               10               15
Ser Cys Thr Lys Ala Ser Lys Pro Trp Arg Arg Arg Pro Gly Gly Pro
              20               25               30
Thr Ser Gly Leu Gly Xaa Gly Pro Leu Ser Pro Gly Pro Tyr Gln Cys
          35               40               45
Arg Pro Ser Leu Pro Ala Gln Leu Tyr Pro Gln Ser Leu Met Ala Ala
    50               55               60
Ala Thr Leu Arg Thr Pro Thr Gln Val Ser Ala Ala Ser Ser Arg Pro
65               70               75               80
His Thr Pro Ser Pro Thr His Val Leu Lys Pro Ser Val Arg Gly Ala
              85               90               95
Cys Ser Ser Pro Arg Cys Pro Gly Ser Gly Thr Leu Arg Arg Ser Trp
          100               105               110
Val Gly Pro Phe Phe
          115   117
```

```
<210> 1174
<211> 370
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1174
Leu Trp Trp Pro Pro Leu Ser Arg His Ala Ala His Arg Gln Trp Pro
```

```
  1                    5                    10                   15
Gly Pro Thr Ala Pro Arg Gly Leu Gly His Lys Val Lys Gly Arg Gly
             20                   25                   30
Ala Ser Pro Ala Ala Met Trp Ser Cys Ser Trp Phe Asn Gly Thr Gly
             35                   40                   45
Leu Val Glu Glu Leu Pro Ala Cys Gln Asp Leu Gln Leu Gly Leu Ser
        50                   55                   60
Leu Leu Ser Leu Leu Gly Leu Val Val Gly Val Pro Val Gly Leu Cys
65                   70                   75                   80
Tyr Asn Ala Leu Leu Val Leu Ala Asn Leu His Ser Lys Ala Ser Met
                 85                   90                   95
Thr Met Pro Asp Val Tyr Phe Val Asn Met Ala Val·Ala Gly Leu Val
             100                  105                  110
Leu Ser Ala Leu Ala Pro Val His Leu Leu Gly Pro Pro Ser Ser Arg
        115                  120                  125
Trp Ala Leu Trp Ser Val Gly Gly Glu Val His Val Ala Leu Gln Ile
        130                  135                  140
Pro Phe Asn Val Ser Ser Leu Val Ala Met Tyr Ser Thr Ala Leu Leu
145                  150                  155                  160
Ser Leu Asp His Tyr Ile Glu Arg Ala Leu Pro Arg Thr Tyr Met Ala
                 165                  170                  175
Ser Val Tyr Asn Thr Arg His Val Cys Gly Phe Val Trp Gly Gly Ala
             180                  185                  190
Leu Leu Thr Ser Phe Ser Ser Leu Leu Phe Tyr Ile Cys Ser His Val
        195                  200                  205
Ser Thr Arg Ala Leu Glu Cys Ala Lys Met Gln Asn Ala Glu Ala Ala
210                  215                  220
Asp Ala Thr Leu Val Phe Ile Gly Tyr Val Val Pro Ala Leu Ala Thr
225                  230                  235                  240
Leu Tyr Ala Leu Val Leu Leu Ser Arg Val Arg Arg Glu Asp Thr Pro
             245                  250                  255
Leu Asp Arg Asp Thr Gly Arg Leu Glu Pro Ser Ala His Arg Leu Leu
        260                  265                  270
Val Ala Thr Val Cys Thr Gln Phe Gly Leu Trp Thr Pro His Tyr Leu
        275                  280                  285
Ile Leu Leu Gly His Thr Val Ile Ile Ser Arg Gly Lys Pro Val Asp
        290                  295                  300
Ala His Tyr Leu Gly Leu Leu His Phe Val Lys Asp Phe Ser Lys Leu
305                  310                  315                  320
Leu Ala Phe Ser Ser Ser Phe Val Thr Pro Leu Leu Tyr Arg Tyr Met
             325                  330                  335
Asn Gln Ser Phe Pro Ser Lys Leu Gln Arg Leu Met Lys Lys Leu Pro
             340                  345                  350
Cys Gly Asp Arg His Cys Ser Pro Asp His Met Gly Val Gln Gln Val
        355                  360                  365
Leu Ala
370
```

```
        <210> 1175
        <211> 145
        <212>Amino acid
        <213> Homo sapiens




        <400> 1175
Ser Glu Ser Glu Leu Phe Thr Leu Met Pro Ser Leu Pro Thr Thr Asn
 1                5                    10                   15
Cys Val His Ser Leu Gln Met Ile Pro Pro Leu Ser Pro Ala Pro Asn
             20                   25                   30
Gln Glu Leu Val Leu Gly Leu Cys Tyr Met Ser Tyr Leu Ala Phe Leu
```

```
              35                        40                        45
Tyr Met Thr Phe Asp Phe Cys Cys Leu Tyr Phe Ser Thr Val Tyr Ala
       50                        55                        60
Pro Ser Phe Lys Tyr Ile Cys Val His Thr Asp Thr His Ile Cys Val
   65                        70                        75                        80
Cys Val Cys Ile Tyr Leu Ser Ser Val Val Ser Lys Ser Ser Ala Glu
                   85                        90                        95
Ala Asp Gly Val Leu Gln Pro Arg Arg His Pro Ala Ser Leu Leu Ile
                  100                       105                       110
Val Phe Ala Thr Ser Ile Ser Glu Ser Ser Leu Leu Ile Phe Ser Phe
              115                       120                       125.
Gln Lys Thr Glu Ala Lys Leu Ile Val Phe Ala Val Ser Leu Ala Ala
          130                       135                       140
Lys
145
```

```
    <210> 1176
    <211> 50
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1176
Phe Phe Phe Leu Arg Gln Ser Leu Thr Leu Ser Pro Arg Leu Glu Cys
  1                 5                      10                      15
Ser Gly Ala Thr Ser Ala Ser Pro Ser Ala Gly Ile Thr Gly Met Ser
              20                       25                       30.
His His Ser Gln Pro Ile Val Asn Phe Leu Arg Ala Cys Ile Pro Ile
          35     .                      40                       45
Ser Lys
      50
```

```
    <210> 1177
    <211> 231
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1177
Arg Gln His Ala Glu Glu Arg Gly Arg Arg Asn Pro Lys Thr Gly Leu
  1                 5                      10     .                 15
Thr Leu Glu Arg Val Gly Pro Glu Ser Ser Pro Tyr Leu Leu Arg Arg
              20                       25                       30
His Gln Arg Gln Gly Gln Glu Gly Glu His Tyr His Ser Cys Val Gln
          35                       40                       45
Leu Ala Pro Thr Arg Gly Leu Glu Glu Ser Gly His Gly Pro Leu Ser
      50                       55                       60
Leu Ala Gly Gly Pro Arg Val Gly Gly Val Ala Ala Ala Ala Thr Glu
 65                       70                       75                       80
Ala Pro Arg Met Glu Trp Lys Val Lys Val Arg Ser Asp Gly Thr Arg
                  85                       90     .                 95
Tyr Val Ala Lys Arg Pro Val Arg Asp Arg Leu Leu Lys Ala Arg Ala
                 100                      105                      110
Leu Lys Ile Arg Glu Glu Arg Ser Gly Met Thr Thr Asp Asp Asp Ala
              115                      120                      125
Val Ser Glu Met Lys Met Gly Arg Tyr Trp Ser Lys Glu Glu Arg Lys
```

```
        130                    135                    140
Gln His Leu Ile Arg Ala Arg Glu Gln Arg Lys Arg Arg Glu Phe Met
145                    150                    155                    160
Met Gln Ser Arg Leu Glu Cys Leu Arg Glu Gln Gln Asn Gly Asp Ser
                165                    170                    175
Lys Pro Glu Leu Asn Ile Ile Ala Leu Ser His Arg Lys Thr Met Lys
            180                    185                    190
Lys Arg Asn Lys Lys Ile Leu Asp Asn Trp Ile Thr Ile Gln Glu Met
            195                    200                    205
Leu Ala His Gly Ala Arg Ser Ala Asp Gly Lys Arg Val Tyr Asn Pro
        210                    215                    220
Leu Leu Ser Val Thr Thr Val
225                    230 231
```

```
        <210> 1178
        <211> 204
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1178
Ser Asp Arg Gly Cys Ser Ala Ala Ala Gly Arg Asn Met Thr Ala Val
  1                 5                    10                    15
Gly Val Gln Ala Gln Arg Pro Leu Gly Gln Arg Gln Pro Arg Arg Ser
                20                    25                    30
Phe Phe Glu Ser Phe Ile Arg Thr Leu Ile Ile Thr Cys Val Ala Leu
            35                    40                    45
Ala Val Val Leu Ser Ser Val Ser Ile Cys Asp Gly His Trp Leu Leu
        50                    55                    60
Ala Glu Asp Arg Leu Phe Gly Leu Trp His Phe Cys Thr Thr Thr Asn
65                    70                    75                    80
Gln Ser Val Pro Ile Cys Phe Arg Asp Leu Gly Gln Ala His Val Pro
                85                    90                    95
Gly Leu Ala Val Gly Met Gly Leu Val Arg Ser Val Gly Ala Leu Ala
            100                   105                   110
Val Val Ala Ala Ile Phe Gly Leu Glu Phe Leu Met Val Ser Gln Leu
        115                   120                   125
Cys Glu Asp Lys His Ser Gln Cys Lys Trp Val Met Gly Ser Ile Leu
    130                   135                   140
Leu Leu Val Ser Phe Val Leu Ser Ser Gly Gly Leu Leu Gly Phe Val
145                   150                   155                   160
Ile Leu Leu Arg Asn Gln Val Thr Leu Ile Gly Phe Thr Leu Met Phe
                165                   170                   175
Trp Cys Glu Phe Thr Ala Ser Phe Leu Leu Phe Leu Asn Ala Ile Ser
            180                   185                   190
Gly Leu His Ile Asn Ser Ile Thr His Pro Trp Glu
        195                   200                   204
```

```
        <210> 1179
        <211> 179
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1179
Gln Ile Leu Pro Asn Leu Tyr Leu Gly Ser Ala Arg Asp Ser Ala Asn
```

```
 1                  5                    10                    15
Leu Glu Ser Leu Ala Lys Leu Gly Ile Arg Tyr Ile Leu Asn Val Thr
              20                    25                    30
Pro Asn Leu Pro Asn Phe Phe Glu Lys Asn Gly Asp Phe His Tyr Lys
          35                    40                    45
Gln Ile Pro Ile Ser Asp His Trp Ser Gln Asn Leu Ser Arg Phe Phe
      50                    55                    60
Pro Glu Ala Ile Glu Phe Ile Asp Glu Ala Leu Ser Gln Asn Cys Gly
65                    70                    75                    80
Val Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val Thr Val Thr
              85                    90                    95
Val Ala Tyr Leu Met Gln Lys Leu His Leu Ser Leu Asn Asp Ala Tyr
              100                   105                   110
Asp Leu Val Lys Arg Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe
              115                   120                   125
Met Gly Gln Leu Leu Asp Phe Glu Arg Ser Leu Arg Leu Glu Glu Arg
              130                   135                   140
His Ser Gln Glu Gln Gly Ser Gly Gly Gln Ala Ser Ala Ala Ser Asn
145                   150                   155                   160
Pro Pro Ser Phe Phe Thr Thr Pro Thr Ser Asp Gly Ala Phe Glu Leu
              165                   170                   175
Ala Pro Thr
    179
```

```
        <210> 1180
        <211> 159
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1180
Arg Lys Ser Leu His Glu Asn Lys Leu Lys Arg Leu Gln Glu Lys Val
  1                  5                    10                    15
Glu Val Leu Glu Ala Lys Lys Glu Glu Leu Glu Thr Glu Asn Gln Val
              20                    25                    30
Leu Asn Arg Gln Asn Val Pro Phe Glu Asp Tyr Thr Arg Leu Gln Lys
          35                    40                    45
Arg Leu Lys Asp Ile Gln Arg Arg His Asn Glu Phe Arg Ser Leu Ile
      50                    55                    60
Leu Val Pro Asn Met Pro Pro Thr Ala Ser Ile Asn Pro Val Ser Phe
65                    70                    75                    80
Gln Ser Ser Ala Met Gly Ser Lys His Gly Thr Thr Ile Ser Ser Ser
              85                    90                    95
Tyr Ala Gly Gly Thr Thr Ser Lys Gly Thr Leu Ser Thr Ser Gln Lys
              100                   105                   110
Thr Arg Arg Thr Gly Asn Asn Thr Lys Lys Thr Thr Arg Gly Thr Trp
          115                   120                   125
Ile Phe Arg Arg Met Met Phe Leu Glu Asn Arg Gln Ile Lys Arg Gly
          130                   135                   140
Glu Val Gly Asp Ser Val Lys Leu Asp Ile Leu Thr Cys Gly Ile
145                   150                   155                   159
```

```
        <210> 1181
        <211> 328
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

<222> (1)...(328)
<223> X = any amino acid or stop code

<400> 1181

```
Gly Arg Pro Gly Ala Gly Ala Ser Glu Leu Phe Pro Ser Val Thr Thr
 1               5                  10                  15
Asp Leu Ser Val Ser Lys Gln Asn Ala Cys Leu Thr Cys Val Asp Phe
                20                  25                  30
Val Thr Val His Val Cys Met Gly Phe Trp Gly Ile Gly Pro Gly Ala
            35                  40                  45
Leu Ser Thr Ser Cys Ile Pro Tyr Pro Leu Ser His Gly Pro Gly Ser
        50                  55                  60
Val Lys Ala Glu Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile
65                  70                  75                  80
Leu Cys Val Arg Leu Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro
                85                  90                  95
Val Val Leu Phe Pro Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro
            100                 105                 110
Gly Lys Ala Phe Ser Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu
        115                 120                 125
Leu Val Leu Val Asn Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp
    130                 135                 140
Ile Phe Gly Val Ile Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile
145                 150                 155                 160
Leu Pro Ser Ile Phe Tyr Leu Arg Ile Val Pro Ser Glu Val Glu Pro
                165                 170                 175
Phe Leu Ser Trp Pro Lys Ile Gln Ala Leu Cys Phe Gly Val Leu Gly
            180                 185                 190
Val Leu Phe Met Ala Val Ser Leu Gly Phe Met Phe Ala Asn Trp Ala
        195                 200                 205
Thr Gly Gln Ser Arg Met Ser Gly His Xaa Ser Gly Pro Ala Gly Pro
    210                 215                 220
Gly Pro Cys Ala His Ala His Gly Gly Val Arg Ala Ala Pro Xaa Gly
225                 230                 235                 240
Pro Ser Cys Pro Thr Cys Gly Gly Gly Trp Phe Pro Xaa Thr Trp Leu
                245                 250                 255
Ser Glu Ala Gly Asp Ser Arg Gly Cys Arg Leu Ala His Phe Pro Pro
            260                 265                 270
Pro Gln Gly Cys Gln Ala Trp Ile Met Ala Leu Ile Pro Thr Pro Thr
        275                 280                 285
Pro Trp Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu
    290                 295                 300
Glu Glu Glu Glu Glu Glu Ala Arg Ser Trp Trp Ser Leu Cys Pro Ala
305                 310                 315                 320
Gln Ser Ser Leu Pro Pro Pro Gly
                325             328
```

<210> 1182
<211> 144
<212>Amino acid
<213> Homo sapiens

<400> 1182

```
Ile Asn Glu Leu Arg Tyr His Leu Glu Glu Ser Arg Asp Lys Asn Val
 1               5                  10                  15
```

704

```
Leu Leu Cys Leu Glu Glu Arg Asp Trp Asp Pro Gly Leu Ala Ile Ile
            20                  25                  30
Asp Asn Leu Met Gln Ser Ile Asn Gln Ser Lys Lys Thr Val Phe Val
            35                  40                  45
Leu Thr Lys Lys Tyr Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe Tyr
    50                  55                  60
Leu Ala Leu Gln Arg Leu Met Asp Glu Asn Met Asp Val Ile Ile Phe
65                  70                  75                  80
Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu Arg Leu Arg
                85                  90                  95
Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro Asp Asn Pro Lys
            100                 105                 110
Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn Val Val Leu Thr Glu
            115                 120                 125
Asn Asp Ser Arg Tyr Asn Asn Met Tyr Val Asp Ser Ile Lys Gln Tyr
    130                 135                 140             144
```

```
<210> 1183
<211> 484
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1183
Asp Asp Pro Ile Lys Thr Ser Trp Thr Pro Pro Arg Tyr Val Leu Ser
1               5                   10                  15
Met Ser Glu Glu Arg His Glu Arg Val Arg Lys Lys Tyr His Ile Leu
            20                  25                  30
Val Glu Gly Asp Gly Ile Pro Pro Ile Lys Ser Phe Lys Glu Met
        35                  40                  45
Lys Phe Pro Ala Ala Ile Leu Arg Gly Leu Lys Lys Lys Gly Ile His
    50                  55                  60
His Pro Thr Pro Ile Gln Ile Gln Gly Ile Pro Thr Ile Leu Ser Gly
65                  70                  75                  80
Arg Asp Met Ile Gly Ile Ala Phe Thr Gly Ser Gly Lys Thr Leu Val
                85                  90                  95
Phe Thr Leu Pro Val Ile Met Phe Cys Leu Glu Gln Glu Lys Arg Leu
            100                 105                 110
Pro Phe Ser Lys Arg Glu Gly Pro Tyr Gly Leu Ile Ile Cys Pro Ser
            115                 120                 125
Arg Glu Leu Ala Arg Gln Thr His Gly Ile Leu Glu Tyr Tyr Cys Arg
    130                 135                 140
Leu Leu Gln Glu Asp Ser Ser Pro Leu Leu Arg Cys Ala Leu Cys Ile
145                 150                 155                 160
Gly Gly Met Ser Val Lys Glu Gln Met Glu Thr Ile Arg His Gly Val
            165                 170                 175
His Met Met Val Ala Thr Pro Gly Arg Leu Met Asp Leu Leu Gln Lys
            180                 185                 190
Lys Met Val Ser Leu Asp Ile Cys Arg Tyr Leu Ala Leu Asp Glu Ala
    195                 200                 205
Asp Arg Met Ile Asp Met Gly Phe Glu Gly Asp Ile Arg Thr Ile Phe
    210                 215                 220
Ser Tyr Phe Lys Gly Gln Arg Gln Thr Leu Leu Phe Ser Ala Thr Met
225                 230                 235                 240
Pro Lys Lys Ile Gln Asn Phe Ala Lys Ser Ala Leu Val Lys Pro Val
            245                 250                 255
Thr Ile Asn Val Gly Arg Ala Gly Ala Ala Ser Leu Asp Val Ile Gln
            260                 265                 270
```

Glu Val Glu Tyr Val Lys Glu Glu Ala Lys Met Val Tyr Leu Leu Glu
        275   280   285
Cys Leu Gln Lys Thr Pro Pro Pro Val Leu Ile Phe Ala Glu Lys Lys
    290   295   300
Ala Asp Val Asp Ala Ile His Glu Tyr Leu Leu Leu Lys Gly Val Glu
305   310   315   320
Ala Val Ala Ile His Gly Gly Lys Asp Gln Glu Glu Arg Thr Lys Ala
                325   330   335
Ile Glu Ala Phe Arg Glu Gly Lys Lys Asp Val Leu Val Ala Thr Asp
            340   345   350
Val Ala Ser Lys Gly Leu Asp Phe Pro Ala Ile Gln His Val Ile Asn
        355   360   365
Tyr Asp Met Pro Glu Glu Ile Glu Asn Tyr Val His Arg Ile Gly Arg
    370   375   380
Thr Gly Arg Ser Gly Asn Thr Gly Ile Ala Thr Thr Phe Ile Asn Lys
385   390   395   400
Ala Cys Asp Glu Ser Val Leu Met Asp Leu Lys Ala Leu Leu Leu Glu
                405   410   415
Ala Lys Gln Lys Val Pro Pro Val Leu Gln Val Leu His Cys Gly Asp
            420   425   430
Glu Ser Met Leu Asp Ile Gly Gly Glu Arg Gly Cys Ala Phe Cys Gly
        435   440   445
Gly Leu Gly His Arg Ile Thr Asp Cys Pro Lys Leu Glu Ala Met Gln
    450   455   460
Thr Lys Gln Val Ser Asn Ile Gly Arg Lys Asp Tyr Leu Ala His Ser
465   470   475   480
Ser Met Asp Phe
        484

        <210> 1184
        <211> 125
        <212>Amino acid
        <213> Homo sapiens

        <400> 1184
Ile Glu Thr Thr Gln Pro Ser Glu Asp Thr Asn Ala Asn Ser Gln Asp
1   5   10   15
Asn Ser Met Gln Pro Glu Thr Ser Ser Gln Gln Leu Leu Ser Pro
        20   25   30
Thr Leu Ser Asp Arg Gly Gly Ser Arg Gln Asp Ala Ala Asp Ala Gly
        35   40   45
Lys Pro Gln Arg Lys Phe Gly Gln Trp Arg Leu Pro Ser Ala Pro Lys
    50   55   60
Pro Ile Ser His Ser Val Ser Ser Val Asn Leu Arg Phe Gly Gly Arg
65   70   75   80
Thr Thr Met Lys Ser Val Val Cys Lys Met Asn Pro Met Thr Asp Ala
            85   90   95
Ala Ser Cys Gly Ser Glu Val Lys Lys Trp Trp Thr Arg Gln Leu Thr
            100   105   110
Val Glu Ser Asp Glu Ser Gly Asp Asp Leu Leu Asp Ile
    115   120   125

        <210> 1185
        <211> 73
        <212>Amino acid
        <213> Homo sapiens

```
        <400> 1185
Asn Asp Arg Phe Ser Ala Cys Tyr Phe Thr Leu Lys Leu Lys Glu Ala
1               5                   10                  15
Ala Val Arg Gln Arg Glu Ala Leu Lys Lys Leu Thr Lys Asn Ile Ala
            20                  25                  30
Thr Asp Ser Tyr Ile Ser Val Asn Leu Arg Asp Val Tyr Ala Arg Ser
        35                  40                  45
Ile Met Glu Met Leu Arg Leu Lys Gly Arg Glu Arg Ala Ser Thr Arg
    50                  55                  60
Ser Ser Gly Gly Asp Asp Phe Trp Phe
65              70          73
```

```
        <210> 1186
        <211> 343
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1186
Phe Thr Val Phe Ile Leu Gly Ile Thr Ile Arg Pro Leu Val Glu Phe
1               5                   10                  15
Leu Asp Val Lys Arg Ser Asn Lys Lys Gln Gln Ala Val Ser Glu Glu
            20                  25                  30
Ile Tyr Cys Arg Leu Phe Asp His Val Lys Thr Gly Ile Glu Asp Val
        35                  40                  45
Cys Gly His Trp Gly His Asn Phe Trp Arg Asp Lys Phe Lys Lys Phe
    50                  55                  60
Asp Asp Lys Tyr Leu Arg Lys Leu Leu Ile Arg Glu Asn Gln Pro Lys
65              70                  75                  80
Ser Ser Ile Val Ser Leu Tyr Lys Lys Leu Glu Ile Lys His Ala Ile
                85                  90                  95
Glu Met Ala Glu Thr Gly Met Ile Ser Thr Val Pro Thr Phe Ala Ser
            100                 105                 110
Leu Asn Asp Cys Arg Glu Glu Lys Ile Arg Lys Val Thr Ser Ser Glu
        115                 120                 125
Thr Asp Glu Ile Arg Glu Leu Leu Ser Arg Asn Leu Tyr Gln Ile Arg
    130                 135                 140
Gln Arg Thr Leu Ser Tyr Asn Arg His Ser Leu Thr Ala Asp Thr Ser
145             150                 155                 160
Glu Arg Gln Ala Lys Glu Ile Leu Ile Arg Arg Arg His Ser Leu Arg
            165                 170                 175
Glu Ser Ile Arg Lys Asp Ser Ser Leu Asn Arg Glu His Arg Ala Ser
            180                 185                 190
Thr Ser Thr Ser Arg Tyr Leu Ser Leu Pro Lys Asn Thr Lys Leu Pro
            195                 200                 205
Glu Lys Leu Gln Lys Arg Arg Thr Ile Ser Ile Ala Asp Gly Asn Ser
    210                 215                 220
Ser Asp Ser Asp Ala Asp Ala Gly Thr Thr Val Leu Asn Leu Gln Pro
225                 230                 235                 240
Arg Ala Arg Arg Phe Leu Pro Glu Gln Phe Ser Lys Lys Ser Pro Gln
                245                 250                 255
Ser Tyr Lys Met Glu Trp Lys Asn Glu Val Asp Val Asp Ser Gly Arg
            260                 265                 270
Asp Met Pro Ser Thr Pro Pro Thr Pro His Ser Arg Glu Lys Gly Thr
        275                 280                 285
Gln Thr Ser Gly Leu Leu Gln Gln Pro Leu Leu Ser Lys Asp Gln Ser
        290                 295                 300
```

707

```
Gly Ser Glu Arg Glu Asp Ser Leu Thr Glu Gly Ile Pro Pro Lys Pro
305                 310                 315                 320
Pro Pro Arg Leu Val Trp Arg Ala Ser Glu Pro Gly Ser Arg Lys Ala
            325                 330                 335
Arg Phe Gly Ser Glu Lys Pro
            340         343
```

```
<210> 1187
<211> 146
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1187
His Glu Glu Ala Ser Gly Leu Ser Val Trp Met Gly Lys Gln Met Glu
 1               5                   10                  15
Pro Leu His Ala Val Pro Pro Ala Ala Ile Thr Leu Ile Leu Ser Leu
            20                  25                  30
Leu Val Ala Val Phe Thr Glu Cys Thr Ser Asn Val Ala Thr Thr Thr
            35                  40                  45
Leu Phe Leu Pro Ile Phe Ala Ser Met Ser Arg Ser Ile Gly Leu Asn
    50                  55                  60
Pro Leu Tyr Ile Met Leu Pro Cys Thr Leu Ser Ala Ser Phe Ala Phe
65                  70                  75                  80
Met Leu Pro Val Ala Thr Pro Pro Asn Ala Ile Val Phe Thr Tyr Gly
                85                  90                  95
His Leu Lys Val Ala Asp Met Val Lys Thr Gly Val Ile Met Asn Ile
            100                 105                 110
Ile Gly Val Phe Cys Val Phe Leu Ala Val Asn Thr Trp Gly Arg Ala
            115                 120                 125
Ile Phe Asp Leu Asp His Phe Pro Asp Trp Ala Asn Val Thr His Ile
    130                 135                 140
Glu Thr
145 146
```

```
<210> 1188
<211> 40
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1188
His Glu Leu Glu Asn Asn Trp Leu Gln His Glu Lys Ala Pro Thr Glu
 1               5                   10                  15
Glu Gly Lys Lys Glu Leu Leu Ala Leu Ser Asn Ala Asn Pro Ser Leu
            20                  25                  30
Leu Glu Arg His Cys Ala Tyr Leu
            35                  40
```

```
<210> 1189
<211> 62
<212>Amino acid
<213> Homo sapiens
```

<400> 1189

```
Gly Asn Ile Ile Tyr Met Tyr Met Gln Pro Gly Ala Arg Ser Ser Gln
1               5                   10                  15
Asp Gln Gly Lys Phe Leu Thr Leu Phe Tyr Asn Ile Val Thr Pro Leu
            20                  25                  30
Leu Asn Pro Leu Ile Tyr Thr Leu Arg Asn Arg Glu Val Lys Gly Ala
        35                  40                  45
Leu Gly Arg Leu Leu Leu Gly Lys Arg Glu Leu Gly Lys Glu
    50                  55                  60    62
```

<210> 1190
<211> 623
<212> Amino acid
<213> Homo sapiens

<400> 1190

```
Pro Leu Glu Gln Arg Ser Asn Cys Arg Val Asp Pro Arg Val Arg Thr
1               5                   10                  15
His Thr Met Ala Ser Asp Thr Ser Ser Leu Val Gln Ser His Thr Tyr
            20                  25                  30
Lys Lys Arg Glu Pro Ala Asp Val Pro Tyr Gln Thr Gly Gln Leu His
        35                  40                  45
Pro Ala Ile Arg Val Ala Asp Leu Leu Gln His Ile Thr Gln Met Lys
    50                  55                  60
Cys Ala Glu Gly Tyr Gly Phe Lys Glu Glu Tyr Glu Ser Phe Phe Glu
65                  70                  75                  80
Gly Gln Ser Ala Pro Trp Asp Ser Ala Lys Lys Asp Glu Asn Arg Met
                85                  90                  95
Lys Asn Arg Tyr Gly Asn Ile Ile Ala Tyr Asp His Ser Arg Val Arg
                100                 105                 110
Leu Gln Thr Ile Glu Gly Asp Thr Asn Ser Asp Tyr Ile Asn Gly Asn
        115                 120                 125
Tyr Ile Asp Gly Tyr His Arg Pro Asn His Tyr Ile Ala Thr Gln Gly
    130                 135                 140
Pro Met Gln Glu Thr Ile Tyr Asp Phe Trp Arg Met Val Trp His Glu
145                 150                 155                 160
Asn Thr Ala Ser Ile Ile Met Val Thr Asn Leu Val Glu Val Gly Arg
                165                 170                 175
Val Lys Cys Cys Lys Tyr Trp Pro Asp Asp Thr Glu Ile Tyr Lys Asp
                180                 185                 190
Ile Lys Val Thr Leu Ile Glu Thr Glu Leu Leu Ala Glu Tyr Val Ile
                195                 200                 205
Arg Thr Phe Ala Val Glu Lys Arg Gly Val His Glu Ile Arg Glu Ile
    210                 215                 220
Arg Gln Phe His Phe Thr Gly Trp Pro Asp His Gly Val Pro Tyr His
225                 230                 235                 240
Ala Thr Gly Leu Leu Gly Phe Val Arg Gln Val Lys Ser Lys Ser Pro
                245                 250                 255
Pro Ser Ala Gly Pro Leu Val Val His Cys Ser Ala Gly Ala Gly Arg
                260                 265                 270
Thr Gly Cys Phe Ile Val Ile Asp Ile Met Leu Asp Met Ala Glu Arg
                275                 280                 285
Glu Gly Val Val Asp Ile Tyr Asn Cys Val Arg Glu Leu Arg Ser Arg
    290                 295                 300
Arg Val Asn Met Val Gln Thr Glu Glu Gln Tyr Val Phe Ile His Asp
305                 310                 315                 320
```

Ala Ile Leu Glu Ala Cys Leu Cys Gly Asp Thr Ser Val Pro Ala Ser
                   325   330   335
Gln Val Arg Ser Leu Tyr Tyr Asp Met Asn Lys Leu Asp Pro Gln Thr
              340   345   350
Asn Ser Ser Gln Ile Lys Glu Glu Phe Arg Thr Leu Asn Met Val Thr
         355   360   365
Pro Thr Leu Arg Val Glu Asp Cys Ser Ile Ala Leu Leu Pro Arg Asn
    370   375   380
His Glu Lys Asn Arg Cys Met Asp Ile Leu Pro Pro Asp Arg Cys Leu
385   390   395   400
Pro Phe Leu Ile Thr Ile Asp Gly Glu Ser Ser Asn Tyr Ile Asn Ala
              405   410   415
Ala Leu Met Asp Ser Tyr Lys Gln Pro Ser Ala Phe Ile Val Thr Gln
         420   425   430
His Pro Leu Pro Asn Thr Val Lys Asp Phe Trp Arg Leu Val Leu Asp
    435   440   445
Tyr His Cys Thr Ser Val Val Met Leu Asn Asp Val Asp Pro Ala Gln
    450   455   460
Leu Cys Pro Gln Tyr Trp Pro Glu Asn Gly Val His Arg His Gly Pro
465   470   475   480
Ile Gln Val Glu Phe Val Ser Ala Asp Leu Glu Glu Asp Ile Ile Ser
              485   490   495
Arg Ile Phe Arg Ile Tyr Asn Ala Ala Arg Pro Gln Asp Gly Tyr Arg
         500   505   510
Met Val Gln Gln Phe Gln Phe Leu Gly Trp Pro Met Tyr Arg Asp Thr
    515   520   525
Pro Val Ser Lys Arg Ser Phe Leu Lys Leu Ile Arg Gln Val Asp Lys
    530   535   540
Trp Gln Glu Glu Tyr Asn Gly Gly Glu Gly Arg Thr Val Val His Cys
545   550   555   560
Leu Asn Gly Gly Gly Arg Ser Gly Thr Phe Cys Ala Ile Ser Ile Val
              565   570   575
Cys Glu Met Leu Arg His Gln Arg Thr Val Asp Val Phe His Ala Val
         580   585   590
Lys Thr Leu Arg Asn Asn Lys Pro Asn Met Val Asp Leu Leu Asp Gln
         595   600   605
Tyr Lys Phe Cys Tyr Glu Val Ala Leu Glu Tyr Leu Asn Ser Gly
    610   615   620   623

         <210> 1191
         <211> 86
         <212>Amino acid
         <213> Homo sapiens

         <400> 1191
Pro Leu Thr Tyr Asn Lys Lys Tyr Thr Tyr Pro Trp Trp Gly Asp Ala
1   5   10   15
Leu Gly Trp Leu Leu Ala Leu Ser Ser Met Val Cys Ile Pro Ala Trp
              20   25   30
Ser Leu Tyr Arg Leu Gly Thr Leu Lys Gly Pro Phe Arg Glu Arg Ile
         35   40   45
Arg Gln Leu Met Cys Pro Ala Glu Asp Leu Pro Gln Arg Asn Pro Ala
    50   55   60
Gly Pro Ser Ala Pro Ala Thr Pro Arg Thr Ser Leu Leu Arg Leu Thr
65   70   75   80
Glu Leu Glu Ser His Cys
              85 86

- 710

```
<210> 1192
<211> 109
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1192
Thr Leu Ser Glu Ser Gly Ala Leu Phe Ser Leu Gly Pro Pro Pro Leu
1               5                   10                  15
Ser Leu Lys Ser Ser Ser Ala Pro Arg Pro Tyr Ser Thr Leu Arg Asp
            20                  25                  30
Cys Leu Glu His Phe Ala Glu Leu Phe Asp Leu Gly Phe Pro Asn Pro
        35                  40                  45
Leu Ala Glu Arg Ile Ile Phe Glu Thr His Gln Ile His Phe Ala Asn
    50                  55                  60
Cys Ser Leu Gly Gln Pro Thr Phe Ser Asp Pro Pro Glu Asp Val Leu
65              70                  75                  80
Leu Ala Met Ile Ile Ala Pro Ile Cys Leu Ile Pro Phe Leu Ile Thr
                85                  90                  95
Leu Val Val Trp Arg Ser Lys Asp Ser Glu Ala Gln Ala
            100                 105             109
```

```
<210> 1193
<211> 257
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1193
Cys Glu Glu Arg Glu Gln Glu Lys Asp Asp Val Asp Val Ala Leu Leu
1               5                   10                  15
Pro Thr Ile Val Glu Lys Val Ile Leu Pro Lys Leu Thr Val Ile Ala
            20                  25                  30
Glu Asn Met Trp Asp Pro Phe Ser Thr Thr Gln Thr Ser Arg Met Val
        35                  40                  45
Gly Ile Thr Leu Lys Leu Ile Asn Gly Tyr Pro Ser Val Val Asn Ala
    50                  55                  60
Glu Asn Lys Asn Thr Gln Val Tyr Leu Lys Ala Leu Leu Leu Arg Met
65              70                  75                  80
Arg Arg Thr Leu Asp Asp Asp Val Phe Met Pro Leu Tyr Pro Lys Asn
                85                  90                  95
Val Leu Glu Asn Lys Asn Ser Gly Pro Tyr Leu Phe Phe Gln Arg Gln
            100                 105                 110
Phe Trp Ser Ser Val Lys Leu Leu Gly Asn Phe Leu Gln Trp Tyr Gly
        115                 120                 125
Ile Phe Ser Asn Lys Thr Leu Gln Glu Leu Ser Ile Asp Gly Leu Leu
    130                 135                 140
Asn Arg Tyr Ile Leu Met Ala Phe Gln Asn Ser Glu Tyr Gly Asp Asp
145                 150                 155                 160
Ser Ile Lys Lys Ala Gln Asn Val Ile Asn Cys Phe Pro Lys Gln Trp
                165                 170                 175
Phe Met Asn Leu Lys Gly Glu Arg Thr Ile Ser Gln Leu Glu Asn Phe
            180                 185                 190
Cys Arg Tyr Leu Val His Leu Ala Asp Thr Ile Tyr Arg Asn Ser Ile
        195                 200                 205
Gly Cys Ser Asp Val Glu Lys Arg Asn Ala Arg Glu Asn Ile Lys Gln
    210                 215                 220
```

```
Ile Val Lys Leu Leu Ala Ser Val Arg Ala Leu Asp His Ala Met Ser
225                     230             235                 240
Val Ala Ser Asp His Asn Val Lys Glu Phe Lys Ser Leu Ile Glu Gly
                245                 250                 255
Lys
257     .        .
```

```
<210> 1194
<211> 416
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1194
Thr Pro Phe Cys Phe Leu Cys Ser Leu Val Phe Arg Ser Arg Val Trp
 1               5                   10                  15
Ala Glu Pro Cys Leu Ile Asp Ala Ala Lys Glu Glu Tyr Asn Gly Val
            20                  25                  30
Ile Glu Glu Phe Leu Ala Thr Gly Glu Lys Leu Phe Gly Pro Tyr Val
        35                  40                  45
Trp Gly Arg Tyr Asp Leu Leu Phe Met Pro Pro Ser Phe Pro Phe Gly
    50                  55                  60
Gly Met Glu Asn Pro Cys Leu Thr Phe Val Thr Pro Cys Leu Leu Ala
65                  70                  75                  80
Gly Asp Arg Ser Leu Ala Asp Val Ile Ile His Glu Ile Ser His Ser
            85                  90                  95
Trp Phe Gly Asn Leu Val Thr Asn Ala Asn Trp Gly Glu Phe Trp Leu
            100                 105                 110
Asn Glu Gly Phe Thr Met Tyr Ala Gln Arg Arg Ile Ser Thr Ile Leu
    .   115                 120                 125
Phe Gly Ala Ala Tyr Thr Cys Leu Glu Ala Ala Thr Gly Arg Ala Leu
    130                 135                 140
Leu Arg Gln His Met Asp Ile Thr Gly Glu Glu Asn Pro Leu Asn Lys
145                 150                 155                 160
Leu Arg Val Lys Ile Glu Pro Gly Val Asp Pro Asp Asp Thr Tyr Asn
                165                 170                 175
Glu Thr Pro Tyr Glu Lys Gly Phe Cys Phe Val Ser Tyr Leu Ala His
            180                 185                 190
Leu Val Gly Asp Gln Asp Gln Phe Asp Ser Phe Leu Lys Ala Tyr Val
        195                 200                 205
His Glu Phe Lys Phe Arg Ser Ile Leu Ala Asp Asp Phe Leu Asp Phe
    210                 215                 220
Tyr Leu Glu Tyr Phe Pro Glu Leu Lys Lys Lys Arg Val Asp Ile Ile
225                 230                 235                 240
Pro Gly Phe Glu Phe Asp Arg Trp Leu Asn Thr Pro Gly Trp Pro Pro
                245                 250                 255
Tyr Leu Pro Asp Leu Ser Pro Gly Asp Ser Leu Met Lys Pro Ala Glu
            260                 265                 270
Glu Leu Ala Gln Leu Trp Ala Ala Glu Glu Leu Asp Met Lys Ala Ile
        275                 280                 285
Glu Ala Val Ala Ile Ser Pro Trp Lys Thr Tyr Gln Leu Val Tyr Phe
    290                 295                 300
Leu Asp Lys Ile Leu Gln Lys Ser Pro Leu Pro Pro Gly Asn Val Lys
305                 310                 315                 320
Lys Leu Gly Asp Thr Tyr Pro Ser Ile Ser Asn Ala Arg Asn Ala Glu
                325                 330                 335
Leu Arg Leu Arg Trp Gly Gln Ile Val Leu Lys Asn Asp His Gln Glu
            340                 345                 350
Asp Phe Trp Lys Val Lys Glu Phe Leu His Asn Gln Gly Lys Gln Lys
    355                 360                 365
```

```
Tyr Thr Leu Pro Leu Tyr His Ala Met Met Gly Gly Ser Glu Val Ala
    370                 375             380
Gln Thr Leu Ala Lys Glu Thr Phe Ala Ser Thr Ala Ser Gln Leu His
385                 390             395                     400
Ser Asn Val Val Asn Tyr Val Gln Gln Ile Val Ala Pro Lys Gly Ser
                405             410             415 416
```

```
<210> 1195
<211> 295
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1195
Cys Ala Ser Gly Ser Ser Gly Trp Arg Pro Val Leu Trp Ala Gly Ala
1             5               10                  15
Phe Thr Met Ala Ser Ala Glu Leu Asp Tyr Thr Ile Glu Ile Pro Asp
            20              25                  30
Gln Pro Cys Trp Ser Gln Lys Asn Ser Pro Ser Pro Gly Gly Lys Glu
            35              40                  45
Ala Glu Thr Arg Gln Pro Val Val Ile Leu Leu Gly Trp Gly Gly Cys
    50              55                  60
Lys Asp Lys Asn Leu Ala Lys Tyr Ser Ala Ile Tyr His Lys Arg Gly
65              70                  75                      80
Cys Ile Val Ile Arg Tyr Thr Ala Pro Trp His Met Val Phe Phe Ser
            85              90                  95
Glu Ser Leu Gly Ile Pro Ser Leu Arg Val Leu Ala Gln Lys Leu Leu
            100             105                 110
Glu Leu Leu Phe Asp Tyr Glu Ile Glu Lys Glu Pro Leu Leu Phe His
    115             120                 125
Val Phe Ser Asn Gly Gly Val Met Leu Tyr Arg Tyr Val Leu Glu Leu
    130             135             140
Leu Gln Thr Arg Arg Phe Cys Arg Leu Arg Val Val Gly Thr Ile Phe
145             150                 155                 160
Asp Ser Ala Pro Gly Asp Ser Asn Leu Val Gly Ala Leu Arg Ala Leu
            165             170                 175
Ala Ala Ile Leu Glu Arg Arg Ala Ala Met Leu Arg Leu Leu Leu Leu
            180             185                 190
Val Ala Phe Ala Leu Val Val Val Leu Phe His Val Leu Leu Ala Pro
    195             200             205
Ile Thr Ala Leu Phe His Thr His Phe Tyr Asp Arg Leu Gln Asp Ala
210             215             220
Gly Ser Arg Trp Pro Glu Leu Tyr Leu Tyr Ser Arg Ala Asp Glu Val
225             230             235                 240
Val Leu Ala Arg Asp Ile Glu Arg Met Val Glu Ala Arg Leu Ala Arg
            245             250                 255
Arg Val Leu Ala Arg Ser Val Asp Phe Val Ser Ser Ala His Val Ser
            260             265                 270
His Leu Arg Asp Tyr Pro Thr Tyr Tyr Thr Ser Leu Cys Val Asp Phe
            275             280             285
Met Arg Asn Trp Val Arg Cys
    290             295
```

```
<210> 1196
<211> 97
<212> Amino acid
<213> Homo sapiens
```

<400> 1196

```
Pro Arg Val Arg Asp Arg Leu Pro Ser Thr Gly Val Arg Asp Arg Lys
1               5               10              15
Gly Asp Lys Pro Trp Lys Glu Ser Gly Gly Ser Val Glu Ala Pro Arg
            20              25              30
Met Gly Phe Thr His Pro Pro Gly His Leu Ser Gly Cys Gln Ser Ser
        35              40              45
Leu Ala Ser Gly Glu Thr Gly Thr Gly Ser Ala Asp Pro Pro Gly Gly
        50              55              60
Pro Arg Pro Gly Leu Thr Arg Arg Ala Pro Val Lys Asp Thr Pro Gly
65              70              75              80
Arg Ala Pro Ala Ala Asp Ala Ala Pro Ala Gly Pro Ser Ser Cys Leu
                85              90              95
Gly
97
```

<210> 1197
<211> 204
<212>Amino acid
<213> Homo sapiens

<400> 1197

```
Gln Gly Arg Thr Ser Cys Ile Gly Leu Tyr Thr Tyr Gln Arg Arg Ile
1               5               10              15
Cys Lys Tyr Arg Asp Gln Tyr Asn Trp Phe Phe Leu Ala Arg Pro Thr
            20              25              30
Thr Phe Ala Ile Ile Glu Asn Leu Lys Tyr Phe Leu Leu Lys Lys Asp
        35              40              45
Pro Ser Gln Pro Phe Tyr Leu Gly His Thr Ile Lys Ser Gly Asp Leu
    50              55              60
Glu Tyr Val Gly Met Glu Gly Gly Ile Val Leu Ser Val Glu Ser Met
65              70              75              80
Lys Arg Leu Asn Ser Leu Leu Asn Ile Pro Glu Lys Cys Pro Glu Gln
                85              90              95
Gly Gly Met Ile Trp Lys Ile Ser Glu Asp Lys Gln Leu Ala Val Cys
            100             105             110
Leu Lys Tyr Ala Gly Val Phe Ala Glu Asn Ala Glu Asp Ala Asp Gly
        115             120             125
Lys Asp Val Phe Asn Thr Lys Ser Val Gly Leu Ser Ile Lys Glu Ala
    130             135             140
Met Thr Tyr His Pro Asn Gln Val Val Glu Gly Cys Cys Ser Asp Met
145             150             155             160
Ala Val Thr Phe Asn Gly Leu Thr Pro Asn Gln Met His Val Met Met
                165             170             175
Tyr Gly Val Tyr Arg Leu Arg Ala Phe Gly His Ile Phe Asn Asp Ala
            180             185             190
Leu Val Phe Leu Pro Pro Asn Gly Ser Asp Asn Asp
        195             200             204
```

<210> 1198
<211> 238
<212>Amino acid
<213> Homo sapiens

<400> 1198

```
His Glu Gly Lys Pro Thr Arg Gly Arg Gly Arg Gly Gly Ser Leu Ser
 1               5                   10                  15
Thr Arg Gly Arg Gly Ser Glu Val Pro Asp Ser Ala His Leu Ala Pro
            20                  25                  30
Thr Pro Leu Phe Ser Glu Ser Gly Cys Cys Gly Leu Arg Ser Arg Phe
        35                  40                  45
Leu Thr Asp Cys Lys Met Glu Glu Gly Gly Asn Leu Gly Gly Leu Ile
    50                  55                  60
Lys Met Val His Leu Leu Val Leu Ser Gly Ala Trp Gly Met Gln Met
65                  70                  75                  80
Trp Val Thr Phe Val Ser Gly Phe Leu Leu Phe Arg Ser Leu Pro Arg
                85                  90                  95
His Thr Phe Gly Leu Val Gln Ser Lys Leu Phe Pro Phe Tyr Phe His
            100                 105                 110
Ile Ser Met Gly Cys Ala Phe Ile Asn Leu Cys Ile Leu Ala Ser Gln
    115                 120                 125
His Ala Trp Ala Gln Leu Thr Phe Trp Glu Ala Ser Gln Leu Tyr Leu
    130                 135                 140
Leu Phe Leu Ser Leu Thr Leu Ala Thr Val Asn Ala Arg Trp Leu Glu
145                 150                 155                 160
Pro Arg Thr Thr Ala Ala Met Trp Ala Leu Gln Thr Val Glu Lys Glu
                165                 170                 175
Arg Gly Leu Gly Gly Glu Val Pro Gly Ser His Gln Gly Pro Asp Pro
            180                 185                 190
Tyr Arg Gln Leu Arg Glu Lys Asp Pro Lys Tyr Ser Ala Leu Arg Gln
        195                 200                 205
Asn Phe Phe Arg Tyr His Gly Leu Ser Ser Leu Cys Asn Leu Gly Cys
    210                 215                 220
Val Leu Ser Asn Gly Leu Cys Leu Ala Ala Leu Pro Trp Lys
225                 230                 235     238
```

```
<210> 1199
<211> 100
<212> Amino acid
<213> Homo sapiens
```

<400> 1199

```
Lys Gln Leu Asp Lys Gln Leu Arg Ala Asp Pro Ser Gly Ser Leu Pro
 1               5                   10                  15
Pro Leu Pro Pro Ser Pro Pro Pro Leu Glu Ala Gly Gly Arg Pro
            20                  25                  30
Pro Glu Val Pro Pro Arg Gly Pro Ser Ala Val Pro Ser Phe Pro Ser
        35                  40                  45
Val Ser Gly Asp Trp Gly Gly Pro Val Glu Ala Gly Glu Gly Gly Gln
    50                  55                  60
Gln Gly Arg Gly Arg Ala Arg Ala Arg Pro Cys Ser Leu Pro Pro Leu
65                  70                  75                  80
Leu Pro Pro Ser Pro Val Cys Arg Leu Ser Gly Ser Arg Ala Pro Leu
                85                  90                  95
Gly Cys Asp Gly
            100
```

```
<210> 1200
<211> 194
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1200
Arg Asn Gln Leu Ser Ser Gln Lys Ser Val Pro Trp Val Pro Ile Leu
 1               5                  10                  15
Lys Ser Leu Pro Leu Trp Ala Ile Val Val Ala His Phe Ser Tyr Asn
                20                  25                  30
Trp Thr Phe Tyr Thr Leu Leu Thr Leu Leu Pro Thr Tyr Met Lys Glu
            35                  40                  45
Ile Leu Arg Phe Asn Val Gln Glu Asn Gly Phe Leu Ser Ser Leu Pro
        50                  55                  60
Tyr Leu Gly Ser Trp Leu Cys Met Ile Leu Ser Gly Gln Ala Ala Asp
65                  70                  75                  80
Asn Leu Arg Ala Lys Trp Asn Phe Ser Thr Leu Cys Val Arg Arg Ile
                85                  90                  95
Phe Ser Leu Ile Gly Met Ile Gly Pro Ala Val Phe Leu Val Ala Ala
            100                 105                 110
Gly Phe Ile Gly Cys Asp Tyr Ser Leu Ala Val Ala Phe Leu Thr Ile
            115                 120                 125
Ser Thr Thr Leu Gly Gly Phe Cys Ser Ser Gly Phe Ser Ile Asn His
        130                 135                 140
Leu Asp Ile Ala Pro Ser Tyr Ala Gly Ile Leu Leu Gly Ile Thr Asn
145                 150                 155                 160
Thr Phe Ala Thr Ile Pro Gly Met Val Gly Pro Val Ile Ala Lys Ser
                165                 170                 175
Leu Thr Pro Asp Met Gly Ile Ser Leu His Arg Pro Gly Trp Ser Ala
            180                 185                 190
Val Ala
194
```

```
<210> 1201
<211> 119
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1201
Gly Pro Ser Gly Thr Thr His Ala Ser Ala His Ser Gly His Pro Gly
 1               5                  10                  15
Ser Pro Arg Gly Ser Leu Ser Arg His Pro Ser Ser Gln Leu Ala Gly
                20                  25                  30
Pro Gly Val Glu Gly Gly Glu Gly Thr Gln Lys Pro Arg Asp Tyr Ile
            35                  40                  45
Ile Leu Ala Ile Leu Ser Cys Phe Cys Pro Met Trp Pro Val Asn Ile
        50                  55                  60
Val Ala Phe Ala Tyr Ala Val Met Ser Arg Asn Ser Leu Gln Gln Gly
65                  70                  75                  80
Asp Val Asp Gly Ala Gln Arg Leu Gly Arg Val Ala Lys Leu Leu Ser
                85                  90                  95
Ile Val Ala Leu Val Gly Gly Val Leu Ile Ile Ile Ala Ser Cys Val
            100                 105                 110
Ile Asn Leu Gly Val Tyr Lys
            115                 119
```

```
<210> 1202
<211> 66
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1202
Ser Leu Phe Leu Ser Phe Pro Pro Leu Ser Phe Lys Met Thr Leu Asn
1               5                   10                  15
Asp Ala Met Arg Asn Lys Ala Arg Leu Ser Ile Thr Gly Ser Thr Gly
            20                  25                  30
Glu Asn Gly Arg Val Met Thr Pro Glu Phe Pro Lys Ala Val His Ala
        35                  40                  45
Val Pro Tyr Val Ser Pro Gly Met Gly Met Asn Val Ser Val Thr Asp
    50                  55                  60
Leu Ser
65  66
```

```
<210> 1203
<211> 509
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1203
Asp Asp Val Pro Pro Pro Ala Pro Asp Leu Tyr Asp Val Pro Pro Gly
1               5                   10                  15
Leu Arg Arg Pro Gly Pro Gly Thr Leu Tyr Asp Val Pro Arg Glu Arg
            20                  25                  30
Val Leu Pro Pro Glu Val Ala Asp Gly Gly Val Val Asp Ser Gly Val
        35                  40                  45
Tyr Ala Val Pro Pro Pro Ala Glu Arg Glu Ala Pro Ala Glu Gly Lys
    50                  55                  60
Arg Leu Ser Ala Ser Ser Thr Gly Ser Thr Arg Ser Ser Gln Ser Ala
65                  70                  75                  80
Ser Ser Leu Glu Val Ala Gly Pro Gly Arg Glu Pro Leu Glu Leu Glu
                85                  90                  95
Val Ala Val Glu Ala Leu Ala Arg Leu Gln Gln Gly Val Ser Ala Thr
            100                 105                 110
Val Ala His Leu Leu Asp Leu Ala Gly Ser Ala Gly Ala Thr Gly Ser
        115                 120                 125
Trp Arg Ser Pro Ser Glu Pro Gln Glu Pro Leu Val Gln Asp Leu Gln
130                 135                 140
Ala Ala Val Ala Ala Val Gln Ser Ala Val His Glu Leu Leu Glu Phe
145                 150                 155                 160
Ala Arg Ser Ala Val Gly Asn Ala Ala His Thr Ser Asp Arg Ala Leu
            165                 170                 175
His Ala Lys Leu Ser Arg Gln Leu Gln Lys Met Glu Asp Val His Gln
        180                 185                 190
Thr Leu Val Ala His Gly Gln Ala Leu Asp Ala Gly Arg Gly Gly Ser
    195                 200                 205
Gly Ala Thr Leu Glu Asp Leu Asp Arg Leu Val Ala Cys Ser Arg Ala
    210                 215                 220
Val Pro Glu Asp Ala Lys Gln Leu Ala Ser Phe Leu His Gly Asn Ala
225                 230                 235                 240
```

```
.Ser Leu Leu Phe Arg Arg Thr Lys Ala Thr Ala Pro Gly Pro Glu Gly
              245                 250                 255
Gly Gly Thr Leu His Pro Asn Pro Thr Asp Lys Thr Ser Ser Ile Gln
              260                 265                 270
Ser Arg Pro Leu Pro Ser Pro Pro Lys Phe Thr Ser Gln Asp Ser Pro
              275                 280                 285
Asp Gly Gln Tyr Glu Asn Ser Glu Gly Gly Trp Met Glu Asp Tyr Asp
    290                 295                 300
Tyr Val His Leu Gln Gly Lys Glu Glu Phe Glu Lys Thr Gln Lys Glu
305                 310                 315                 320
Leu Leu Glu Lys Gly Ser Ile Thr Arg Gln Gly Lys Ser Gln Leu Glu
              325                 330                 335
Leu Gln Gln Leu Lys Gln Phe Glu Arg Leu Glu Gln Glu Val Ser Arg
              340                 345                 350
Pro Ile Asp His Asp Leu Ala Asn Trp Thr Pro Ala Gln Pro Leu Ala
              355                 360                 365
Pro Gly Arg Thr Gly Gly Leu Gly Pro Ser Asp Arg Gln Leu Leu Leu
    370                 375                 380
Phe Tyr Leu Glu Gln Cys Glu Ala Asn Leu Thr Thr Leu Thr Asn Ala
385                 390                 395                 400
Val Asp Ala Phe Phe Thr Ala Val Ala Thr Asn Gln Pro Pro Lys Ile
              405                 410                 415
Phe Val Ala His Ser Lys Phe Val Ile Leu Ser Ala His Lys Leu Val
              420                 425                 430
Phe Ile Gly Asp Thr Leu Ser Arg Gln Ala Lys Ala Ala Asp Val Arg
              435                 440                 445
Ser Gln Val Thr His Tyr Ser Asn Leu Leu Cys Asp Leu Leu Arg Gly
    450                 455                 460
Ile Val Ala Thr Thr Lys Ala Ala Ala Leu Gln Tyr Pro Ser Pro Ser
465                 470                 475                 480
Ala Ala Gln Asp Met Val Glu Arg Val Lys Glu Leu Gly His Ser Thr
              485                 490                 495
Gln Gln Phe Arg Arg Val Leu Gly Gln Leu Ala Ala Ala
              500                 505             509


        <210> 1204
        <211> 453
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(453)
        <223> X = any amino acid or stop code




        <400> 1204
Glu Met Glu Glu Pro Gln Lys Ser Tyr Val Asn Thr Met Asp Leu Glu
    1                 5                 10                 15
Arg Asp Glu Pro Leu Lys Ser Thr Gly Pro Gln Ile Ser Val Ser Glu
              20                 25                 30
Phe Ser Cys His Cys Cys Tyr Asp Ile Leu Val Asn Pro Thr Thr Leu
              35                 40                 45
Asn Cys Gly His Ser Phe Cys Arg His Cys Leu Ala Leu Trp Trp Ala
    50                 55                 60
Ser Ser Lys Lys Thr Glu Cys Pro Glu Cys Arg Glu Lys Trp Glu Gly
65                 70                 75                 80
Phe Pro Lys Val Ser Ile Leu Leu Arg Asp Ala Ile Glu Lys Leu Phe
              85                 90                 95
Pro Asp Ala Ile Arg Leu Arg Phe Glu Asp Ile Gln Gln Asn Asn Asp
```

```
                    100                      105                      110
Ile Val Gln Ser Leu Ala Ala Phe Gln Lys Tyr Gly Asn Asp Gln Ile
         115                      120                      125
Pro Leu Ala Pro Asn Thr Gly Arg Ala Asn Gln Gln Met Gly Gly Gly
         130                      135                      140
Phe Phe Ser Gly Val Leu Thr Ala Leu Thr Gly Val Ala Val Val Leu
145                      150                      155                      160
Leu Val Tyr His Trp Ser Ser Arg Glu Ser Glu His Asp Leu Leu Val
                    165                      170                      175
His Lys Ala Val Ala Lys Trp Thr Ala Glu Glu Val Val Leu Trp Leu
                    180                      185                      190
Glu Gln Leu Gly Pro Trp Ala Ser Leu Tyr Arg Glu Arg Phe Leu Ser
         195                      200                      205
Glu Arg Val Asn Gly Arg Leu Leu Leu Thr Leu Thr Glu Glu Glu Phe
         210                      215                      220
Ser Lys Thr Pro Tyr Thr Ile Glu Asn Ser Ser His Arg Arg Ala Ile
225                      230                      235                      240
Leu Met Glu Leu Glu Arg Val Lys Ala Leu Gly Val Lys Pro Pro Gln
                    245                      250                      255
Asn Leu Trp Glu Tyr Lys Ala Val Asn Pro Gly Arg Ser Leu Phe Leu
                    260                      265                      270
Leu Tyr Ala Leu Lys Ser Ser Pro Arg Leu Ser Leu Leu Tyr Leu Tyr
                    275                      280                      285
Leu Phe Asp Tyr Thr Asp Thr Phe Leu Pro Phe Ile His Thr Ile Cys
         290                      295                      300
Pro Leu Gln Glu Asp Ser Ser Gly Glu Asp Ile Val Thr Lys Leu Leu
305                      310                      315                      320
Asp Leu Lys Glu Pro Thr Trp Lys Gln Trp Arg Glu Phe Leu Val Lys
                    325                      330                      335
Tyr Ser Phe Leu Pro Tyr Gln Leu Ile Ala Glu Phe Ala Trp Asp Trp
                    340                      345                      350
Leu Glu Val His Tyr Trp Thr Ser Arg Phe Leu Ile Ile Asn Ala Met
                    355                      360                      365
Leu Leu Ser Val Leu Glu Leu Phe Ser Phe Trp Arg Ile Trp Ser Arg
         370                      375                      380
Ser Glu Leu Lys Xaa Val Gly Phe Arg Phe Leu Arg Leu Gly Val Ala
385                      390                      395                      400
Ala Leu Gly Ser Val Glu Val Ala Gly Leu Arg Gly Val Val Lys Gly
                    405                      410                      415
Glu Arg Pro Leu Leu Tyr Gly His Gly Ala Gly Ala Arg Phe Pro His
         420                      425                      430
Ser Val Leu Leu Leu Pro Val Ala Lys Pro Leu Pro Leu Pro Leu Leu
         435                      440                      445
Pro Arg Gly Leu Cys
450                 453
```

```
         <210> 1205
         <211> 80
         <212> Amino acid
         <213> Homo sapiens
```

```
         <400> 1205
Glu Lys Ala Arg Met Ile Tyr Glu Asp Tyr Ile Ser Ile Leu Ser Pro
 1                  5                       10                      15
Lys Glu Val Ser Leu Asp Ser Arg Val Arg Glu Val Ile Asn Arg Asn
         20                      25                      30
Leu Leu Asp Pro Asn Pro His Met Tyr Glu Asp Ala Gln Leu Gln Ile
         35                      40                      45
Tyr Thr Leu Met His Arg Asp Ser Phe Pro Arg Phe Leu Asn Ser Gln
```

```
             50                      55                      60
Ile Tyr Lys Ser Phe Val Glu Ser Thr Ala Gly Ser Ser Ser Glu Ser
 65                      70                      75                      80
```

<210> 1206
<211> 205
<212>Amino acid
<213> Homo sapiens

<400> 1206
```
Leu Tyr Tyr Ser Gln Asp Glu Glu Ser Lys Ile Met Ile Ser Asp Phe
 1               5                      10                      15
Gly Leu Ser Lys Met Glu Gly Lys Gly Asp Val Met Ser Thr Ala Cys
                20                      25                      30
Gly Thr Pro Gly Tyr Val Ala Pro Glu Val Leu Ala Gln Lys Pro Tyr
            35                      40                      45
Ser Lys Ala Val Asp Cys Trp Ser Ile Gly Val Ile Ala Tyr Ile Leu
     50                      55                      60
Leu Cys Gly Tyr Pro Pro Phe Tyr Asp Glu Asn Asp Ser Lys Leu Phe
 65                      70                      75                      80
Glu Gln Ile Leu Lys Ala Glu Tyr Glu Phe Asp Ser Pro Tyr Trp Asp
                85                      90                      95
Asp Ile Ser Asp Ser Ala Lys Asp Phe Ile Arg Asn Leu Met Glu Lys
                100                     105                     110
Asp Pro Asn Lys Arg Tyr Thr Cys Glu Gln Ala Ala Arg His Pro Trp
            115                     120                     125
Ile Ala Gly Asp Thr Ala Leu Asn Lys Asn Ile His Glu Ser Val Ser
        130                     135                     140
Ala Gln Ile Arg Lys Asn Phe Ala Lys Ser Lys Trp Arg Gln Ala Phe
145                     150                     155                     160
Asn Ala Thr Ala Val Val Arg His Met Arg Lys Leu His Leu Gly Ser
                165                     170                     175
Ser Leu Asp Ser Ser Asn Ala Ser Val Ser Ser Ser Leu Ser Leu Ala
            180                     185                     190
Ser Gln Lys Asp Cys Ala Ser Gly Thr Phe His Ala Leu
            195                     200                     205
```

<210> 1207
<211> 117
<212>Amino acid
<213> Homo sapiens

<400> 1207
```
Arg Thr Arg Gly Gly Ala Val Ser Phe Glu Asp Phe Ile Lys Gly Leu
 1               5                      10                      15
Ser Ile Leu Leu Arg Gly Thr Val Gln Glu Lys Leu Asn Trp Ala Phe
                20                      25                      30
Asn Leu Tyr Asp Ile Asn Lys Asp Gly Tyr Ile Thr Lys Glu Glu Met
            35                      40                      45
Leu Asp Ile Met Lys Ala Ile Tyr Asp Met Met Gly Lys Cys Thr Tyr
     50                      55                      60
Pro Val Leu Lys Glu Asp Ala Pro Arg Gln His Val Glu Thr Phe Phe
```

```
     65                      70                    75                      80
  Gln Lys Met Asp Lys Asn Lys Asp Gly Val Val Thr Ile Asp Glu Phe
                          85                    90                      95
  Ile Glu Ser Cys Gln Lys Asp Glu Asn Ile Met Arg Ser Met Gln Leu
                 100                    105                    110
  Phe Glu Asn Val Ile
              115     117
```

```
      <210> 1208
      <211> 337
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 1208
  Pro Arg Ser Pro Glu His His Thr Pro Ala Trp His Glu Gly Arg Ser
   1                 5                    10                     15
  Leu Gly Pro Ile Met Ala Ser Met Ala Asp Arg Asn Met Lys Leu Phe
                 20                    25                     30
  Ser Gly Arg Val Val Pro Ala Gln Gly Glu Glu Thr Phe Glu Asn Trp
              35                    40                     45
  Leu Thr Gln Val Asn Gly Val Leu Pro Asp Trp Asn Met Ser Glu Glu
         50                    55                     60
  Glu Lys Leu Lys Arg Leu Met Lys Thr Leu Arg Gly Pro Ala Arg Glu
   65                     70                    75                     80
  Val Met Arg Val Leu Gln Ala Thr Asn Pro Asn Leu Ser Val Ala Asp
                 85                    90                     95
  Phe Leu Arg Ala Met Lys Leu Val Phe Gly Glu Ser Glu Ser Ser Val
                 100                   105                    110
  Thr Ala His Gly Lys Phe Phe Asn Thr Leu Gln Ala Gln Gly Glu Lys
              115                   120                    125
  Ala Ser Leu Tyr Val Ile Arg Leu Glu Val Gln Leu Gln Asn Ala Ile
         130                   135                    140
  Gln Ala Gly Ile Ile Ala Glu Lys Asp Ala Asn Arg Thr Arg Leu Gln
  145                   150                   155                    160
  Gln Leu Leu Leu Gly Gly Glu Leu Ser Arg Asp Leu Arg Leu Arg Leu
                 165                   170                    175
  Lys Asp Phe Leu Arg Met Tyr Ala Asn Glu Gln Glu Arg Leu Pro Asn
              180                   185                    190
  Phe Leu Glu Leu Ile Lys Met Val Arg Glu Glu Glu Asp Trp Asp Asp
         195                   200                    205
  Ala Phe Ile Lys Arg Lys Arg Pro Lys Arg Ser Glu Ser Met Val Glu
     210                   215                    220
  Arg Ala Val Ser Pro Val Ala Phe Gln Gly Ser Pro Pro Ile Val Ile
  225                   230                   235                    240
  Gly Ser Ala Asp Cys Asn Val Ile Glu Ile Asp Asp Thr Leu Asp Asp
                 245                   250                    255
  Ser Asp Glu Asp Val Ile Leu Val Glu Ser Gln Asp Pro Pro Leu Pro
              260                   265                    270
  Ser Trp Gly Ala Pro Pro Leu Arg Asp Arg Ala Arg Pro Gln Asp Glu
              275                   280                    285
  Val Leu Val Ile Asp Ser Pro His Asn Ser Arg Ala Gln Phe Pro Ser
     290                   295                    300
  Thr Ser Gly Gly Ser Gly Tyr Lys Asn Asn Gly Pro Gly Glu Met Arg
  305                   310                   315                    320
  Arg Ala Arg Lys Arg Lys His Thr Ile Arg Cys Ser Tyr Cys Gly Glu
                 325                   330                    335
  Glu
  337
```

721

<210> 1209
<211> 64
<212>Amino acid
<213> Homo sapiens

<400> 1209
```
Ser Val Ala Cys Thr Val Pro Leu Arg Ser Met Ser Asp Pro Asp Gln
 1               5                   10                  15
Asp Phe Asp Lys Glu Pro Asp Ser Asp Ser Thr Lys His Ser Thr Pro
            20                  25                  30
Ser Asn Ser Ser Asn Pro Ser Gly Pro Pro Ser Pro Asn Ser Pro His
        35                  40                  45
Arg Ser Gln Leu Pro Leu Glu Gly Leu Glu Gln Pro Ala Cys Asp Thr
    50                  55                  60              64
```

<210> 1210
<211> 316
<212>Amino acid
<213> Homo sapiens

<400> 1210
```
Tyr Ser Ala Val Glu Phe Ala Glu Arg Gly Ser Gly Gly Ser Ser Gly
 1               5                   10                  15
Asp Glu Leu Arg Glu Asp Asp Glu Pro Val Lys Lys Arg Gly Arg Lys
            20                  25                  30
Gly Arg Gly Arg Gly Pro Pro Ser Ser Ser Asp Ser Glu Pro Glu Ala
        35                  40                  45
Glu Leu Glu Arg Glu Ala Lys Lys Ser Ala Lys Lys Pro Gln Ser Ser
    50                  55                  60
Ser Thr Glu Pro Ala Arg Lys Pro Gly Gln Lys Glu Lys Arg Val Arg
65                  70                  75                  80
Pro Glu Glu Lys Gln Gln Ala Lys Pro Val Lys Val Glu Arg Thr Arg
                . 85                  90                  95
Lys Arg Ser Glu Gly Phe Ser Met Asp Arg Lys Val Glu Lys Lys Lys
                100                 105                 110
Glu Pro Ser Val Glu Glu Lys Leu Gln Lys Leu His Ser Glu Ile Lys
        115                     120                 125
Phe Ala Leu Lys Val Asp Ser Pro Asp Val Lys Arg Cys Leu Asn Ala
    130                 135                 140
Leu Glu Glu Leu Gly Thr Leu Gln Val Thr Ser Gln Ile Leu Gln Lys
145                 150                 155                 160
Asn Thr Asp Val Val Ala Thr Leu Lys Lys Ile Arg Arg Tyr Lys Ala
                165                 170                 175
Asn Lys Asp Val Met Glu Lys Ala Ala Glu Val Tyr Thr Arg Leu Lys
            180                 185                 190
Ser Arg Val Leu Gly Pro Lys Ile Glu Ala Val Gln Lys Val Asn Lys
        195                 200                 205
Ala Gly Met Glu Lys Glu Lys Ala Glu Glu Lys Leu Ala Gly Glu Glu
    210                 215                 220
Leu Ala Gly Glu Glu Ala Pro Gln Glu Lys Ala Glu Asp Lys Pro Ser
225                 230                 235                 240
Thr Asp Leu Ser Ala Pro Val Asn Gly Glu Ala Thr Ser Gln Lys Gly
```

```
                        245       /    /    250    '    /    255
Glu Ser Ala Glu Asp Lys Glu His Glu Glu Gly Arg Asp Ser Glu Glu
                260                 265                 270
Gly Pro Arg Cys Gly Ser Ser Glu Asp Leu His Asp Ser Val Arg Glu
        275                 280                 285
Gly Pro Asp Leu Asp Arg Pro Gly Ser Asp Arg Gln Glu Arg Glu Arg
        290                 295                 300
Ala Arg Gly Asp Ser Glu Ala Leu Asp Glu Glu Ser
305                 310                 315 316
```

```
        <210> 1211
        <211> 767
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1211
Leu Ala Glu Leu Ser Ser Leu Ser Val Leu Arg Leu Ser His Asn Ser
  1               5                 10                15
Ile Ser His Ile Ala Glu Gly Ala Phe Lys Gly Leu Arg Ser Leu Arg
                20                 25                 30
Val Leu Asp Leu Asp His Asn Glu Ile Ser Gly Thr Ile Glu Asp Thr
            35                 40                 45
Ser Gly Ala Phe Ser Gly Leu Asp Ser Leu Ser Lys Leu Thr Leu Phe
   50                 55                 60
Gly Asn Lys Ile Lys Ser Val Ala Lys Arg Ala Phe Ser Gly Leu Glu
65                 70                 75                 80
Gly Leu Glu His Leu Asn Leu Gly Gly Asn Ala Ile Arg Ser Val Gln
            85                 90                 95
Phe Asp Ala Phe Val Lys Met Lys Asn Leu Lys Glu Leu His Ile Ser
           100                105                110
Ser Asp Ser Phe Leu Cys Asp Cys Gln Leu Lys Trp Leu Pro Pro Trp
       115                120                125
Leu Ile Gly Arg Met Leu Gln Ala Phe Val Thr Ala Thr Cys Ala His
   130                135                140
Pro Glu Ser Leu Lys Gly Gln Ser Ile Phe Ser Val Pro Pro Glu Ser
145                150                155                160
Phe Val Cys Asp Asp Phe Leu Lys Pro Gln Ile Ile Thr Gln Pro Glu
               165                170                175
Thr Thr Met Ala Met Val Gly Lys Asp Ile Arg Phe Thr Cys Ser Ala
           180                185                190
Ala Ser Ser Ser Ser Ser Pro Met Thr Phe Ala Trp Lys Lys Asp Asn
       195                200                205
Glu Val Leu Thr Asn Ala Asp Met Glu Asn Phe Val His Val His Ala
   210                215                220
Gln Asp Gly Glu Val Met Glu Tyr Thr Thr Ile Leu His Leu Arg Gln
225                230                235                240
Val Thr Phe Gly His Glu Gly Arg Tyr Gln Cys Val Ile Thr Asn His
               245                250                255
Phe Gly Ser Thr Tyr Ser His Lys Ala Arg Leu Thr Val Asn Val Leu
           260                265                270
Pro Ser Phe Thr Lys Thr Pro His Asp Ile Thr Ile Arg Thr Thr Thr
       275                280                285
Met Ala Arg Leu Glu Cys Ala Ala Thr Gly His Pro Asn Pro Gln Ile
   290                295                300
Ala Trp Gln Lys Asp Gly Gly Thr Asp Phe Pro Ala Ala Arg Glu Arg
305                310                315                320
Arg Met His Val Met Pro Asp Asp Val Phe Phe Ile Thr Asp Val
           325                330                335
Lys Ile Asp Asp Ala Gly Val Tyr Ser Cys Thr Ala Gln Asn Ser Ala
```

```
                  340                      345                      350
Gly Ser Ile Ser Ala Asn Ala Thr Leu Thr Val Leu Glu Thr Pro Ser
            355                      360                      365
Leu Val Val Pro Leu Glu Asp Arg Val Val Ser Val Gly Glu Thr Val
        370                      375                      380
Ala Leu Gln Cys Lys Ala Thr Gly Asn Pro Pro Pro Arg Ile Thr Trp
    385                      390                      395                      400
Phe Lys Gly Asp Arg Pro Leu Ser Leu Thr Glu Arg His His Leu Thr
                405                      410                      415
Pro Asp Asn Gln Leu Leu Val Val Gln Asn Val Val Ala Glu Asp Ala
            420                      425                      430
Gly Arg Tyr Thr Cys Glu Met Ser Asn Thr Leu Gly Thr Glu Arg Ala
            435                      440                      445
His Ser Gln Leu Ser Val Leu Pro Ala Ala Gly Cys Arg Lys Asp Gly
        450                      455                      460
Thr Thr Val Gly Ile Phe Thr Ile Ala Val Val Ser Ser Ile Val Leu
    465                      470                      475                      480
Thr Ser Leu Val Trp Val Cys Ile Ile Tyr Gln Thr Arg Lys Lys Ser
                485                      490                      495
Glu Glu Tyr Ser Val Thr Asn Thr Asp Glu Thr Val Val Pro Pro Asp
            500                      505                      510
Val Pro Ser Tyr Leu Ser Ser Gln Gly Thr Leu Ser Asp Arg Gln Glu
        515                      520                      525
Thr Val Val Arg Thr Glu Gly Gly Pro Gln Ala Asn Gly His Ile Glu
    530                      535                      540
Ser Asn Gly Val Cys Pro Arg Asp Ala Ser His Phe Pro Glu Pro Asp
545                      550                      555                      560
Thr His Ser Val Ala Cys Arg Gln Pro Lys Leu Cys Ala Gly Ser Ala
                565                      570                      575
Tyr His Lys Lys Pro Trp Lys Ala Met Glu Lys Ala Glu Gly Thr Pro
            580                      585                      590
Gly Pro His Lys Met Glu His Gly Gly Arg Val Val Cys Ser Asp Cys
            595                      600                      605
Asn Thr Glu Val Asp Cys Tyr Ser Arg Gly Gln Ala Phe His Pro Gln
    610                      615                      620
Pro Val Ser Arg Asp Ser Ala Gln Pro Ser Ala Pro Asn Gly Pro Glu
625                      630                      635                      640
Pro Gly Gly Ser Asp Gln Glu His Ser Pro His His Gln Cys Ser Arg
            645                      650                      655
Thr Ala Ala Gly Ser Cys Pro Glu Cys Gln Gly Ser Leu Tyr Pro Ser
            660                      665                      670
Asn His Asp Arg Met Leu Thr Ala Val Lys Lys Lys Pro Met Ala Ser
        675                      680                      685
Leu Asp Gly Lys Gly Asp Ser Ser Trp Thr Leu Ala Arg Leu Tyr His
    690                      695                      700
Pro Asp Ser Thr Glu Leu Gln Pro Ala Ser Ser Leu Thr Ser Gly Ser
705                      710                      715                      720
Pro Glu Arg Ala Glu Ala Gln Tyr Leu Leu Val Ser Asn Gly His Leu
            725                      730                      735
Pro Lys Ala Cys Asp Ala Ser Pro Glu Ser Thr Pro Leu Thr Gly Gln
        740                      745                      750
Leu Pro Gly Lys Gln Arg Val Pro Leu Leu Leu Ala Pro Lys Ser
            755                      760                      765      767
```

<210> 1212
<211> 821
<212>Amino acid
<213> Homo sapiens

```
        <400> 1212
Ala Ala Ala Gly Ala Ala Arg Arg Val Ser Val Arg Cys Gly Arg Ser
 1            5                  10                  15
Gly Pro Gly Pro Gly Arg Gly Ala Ala Gly Leu Ser Pro Ala Asp Ile
          20                  25                  30
Ala Leu Ala Ser Glu Gln Gly Ala Ser Cys Ser Val Arg Ala Pro Glu
          35                  40                  45
Arg Lys Leu Arg Met Lys Leu Leu Trp Gln Ala Lys Met Ser Ser Ile
     50                  55                  60
Gln Asp Trp Gly Glu Glu Val Glu Glu Gly Ala Val Tyr His Val Thr
 65                  70                  75                  80
Leu Lys Arg Val Gln Ile Gln Gln Ala Ala Asn Lys Gly Ala Arg Trp
               85                  90                  95
Leu Gly Val Glu Gly Asp Gln Leu Pro Pro Gly His Thr Val Ser Gln
          100                 105                 110
Tyr Glu Thr Cys Lys Ile Arg Thr Ile Lys Ala Gly Thr Leu Glu Lys
          115                 120                 125
Leu Val Glu Asn Leu Leu Thr Ala Phe Gly Asp Asn Asp Phe Thr Tyr
     130                 135                 140
Ile Ser Ile Phe Leu Ser Thr Tyr Arg Gly Phe Ala Ser Thr Lys Glu
145                 150                 155                 160
Val Leu Glu Leu Leu Leu Asp Arg Tyr Gly Asn Leu Thr Ser Pro Asn
               165                 170                 175
Cys Glu Glu Asp Gly Ser Gln Ser Ser Ser Glu Ser Lys Met Val Ile
          180                 185                 190
Arg Asn Ala Ile Ala Ser Ile Leu Arg Ala Trp Leu Asp Gln Cys Ala
     195                 200                 205
Glu Asp Phe Arg Glu Pro Pro His Phe Pro Cys Leu Gln Lys Leu Leu
210                 215                 220
Asp Tyr Leu Thr Arg Met Met Pro Gly Ser Asp Pro Glu Arg Arg Ala
225                 230                 235                 240
Gln Asn Leu Leu Glu Gln Phe Gln Lys Gln Glu Val Glu Thr Asp Asn
          245                 250                 255
Gly Leu Pro Asn Thr Ile Ser Phe Ser Leu Glu Glu Glu Glu Glu Leu
          260                 265                 270
Glu Gly Gly Glu Ser Ala Glu Phe Thr Cys Phe Ser Glu Asp Leu Val
     275                 280                 285
Ala Glu Gln Leu Thr Tyr Met Asp Ala Gln Leu Phe Lys Lys Val Val
290                 295                 300
Pro His His Cys Leu Gly Cys Ile Trp Ser Arg Arg Asp Lys Lys Glu
305                 310                 315                 320
Asn Lys His Leu Ala Pro Thr Ile Arg Ala Thr Ile Ser Gln Phe Asn
          325                 330                 335
Thr Leu Thr Lys Cys Val Val Ser Thr Ile Leu Gly Gly Lys Glu Leu
          340                 345                 350
Lys Thr Gln Gln Arg Ala Lys Ile Ile Glu Lys Trp Ile Asn Ile Ala
     355                 360                 365
His Glu Cys Arg Leu Leu Lys Asn Phe Ser Ser Leu Arg Ala Ile Val
     370                 375                 380
Ser Ala Leu Gln Ser Asn Ser Ile Tyr Arg Leu Lys Lys Thr Trp Ala
385                 390                 395                 400
Ala Val Pro Arg Asp Arg Met Leu Met Phe Glu Glu Leu Ser Asp Ile
          405                 410                 415
Phe Ser Asp His Asn Asn His Leu Thr Ser Arg Glu Leu Leu Met Lys
          420                 425                 430
Glu Gly Thr Ser Lys Phe Ala Asn Leu Asp Ser Ser Val Lys Glu Asn
          435                 440                 445
Gln Lys Arg Thr Gln Arg Arg Leu Gln Leu Gln Lys Asp Met Gly Val
     450                 455                 460
Met Gln Gly Thr Val Pro Tyr Leu Gly Thr Phe Leu Thr Asp Leu Thr
465                 470                 475                 480
Met Leu Asp Thr Ala Leu Gln Asp Tyr Ile Glu Gly Gly Leu Ile Asn
          485                 490                 495
Phe Glu Lys Arg Arg Arg Glu Phe Glu Val Ile Ala Gln Ile Lys Leu
```

```
                   500                      505                      510
Leu Gln Ser Ala Cys Asn Ser Tyr Cys Met Thr Pro Asp Gln Lys Phe
               515                      520                      525
Ile Gln Trp Phe Gln Arg Gln Gln Leu Leu Thr Glu Glu Glu Ser Tyr
               530                      535                      540
Ala Leu Ser Cys Glu Ile Glu Ala Ala Ala Asp Ala Ser Thr Thr Ser
545                      550                      555                      560
Pro Lys Pro Trp Lys Ser Met Val Lys Arg Leu Asn Leu Leu Phe Leu
                   565                      570                      575
Gly Ala Asp Met Ile Thr Ser Pro Thr Pro Thr Lys Glu Gln Pro Lys
               580                      585                      590
Ser Thr Ala Ser Gly Ser Ser Gly Glu Ser Met Asp Ser Val Ser Val
               595                      600                      605
Ser Ser Cys Glu Ser Asn His Ser Glu Ala Glu Glu Gly Tyr Ile Thr
610                      615                      620
Pro Met Asp Thr Pro Asp Glu Pro Gln Lys Lys Leu Ser Glu Ser Ser
625                          630                      635                      640
Ser Tyr Cys Ser Ser Ile His Ser Met Asp Thr Asn Phe Leu Gln Gly
               645                      650                      655
Met Ser Ser Leu Ile Asn Pro Leu Ser Ser Pro Pro Ser Cys Asn Asn
               660                      665                      670
Asn Pro Lys Ile His Lys Arg Ser Val Ser Val Thr Ser Ile Thr Ser
               675                      680                      685
Thr Val Leu Pro Pro Val Tyr Asn Gln Gln Asn Glu Asp Thr Cys Ile
               690                      695                      700
Ile Arg Ile Ser Val Glu Asp Asn Asn Gly Asn Met Tyr Lys Ser Ile
705                      710                      715                      720
Met Leu Thr Ser Gln Asp Lys Thr Pro Ala Val Ile Gln Arg Ala Met
               725                      730                      735
Leu Lys His Asn Leu Asp Ser Asp Pro Ala Glu Glu Tyr Glu Leu Val
               740                      745                      750
Gln Val Ile Ser Glu Asp Lys Glu Leu Val Ile Pro Asp Ser Ala Asn
               755                      760                      765
Val Phe Tyr Ala Met Asn Ser Gln Val Asn Phe Asp Phe Ile Leu Arg
               770                      775                      780
Lys Lys Asn Ser Met Glu Glu Gln Val Lys Leu Arg Ser Arg Thr Ser
785                      790                      795                      800
Leu Thr Leu Pro Arg Thr Ala Lys Arg Gly Cys Trp Ser Asn Arg His
                   805                      810                      815
Ser Lys Ile Thr Leu
               820 821
```

```
<210> 1213
<211> 289
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1213
```

```
Ala Arg Glu Lys Met Asp Ser Cys Ile Glu Ala Phe Gly Thr Thr Lys
1                       5                       10                      15
Gln Lys Arg Ala Leu Asn Thr Arg Arg Met Asn Arg Val Gly Asn Glu
               20                      25                      30
Ser Leu Asn Arg Ala Val Ala Lys Ala Ala Glu Thr Ile Ile Asp Thr
               35                      40                      45
Lys Gly Val Thr Ala Leu Val Ser Asp Ala Ile His Asn Asp Leu Gln
50                      55                      60
Asp Asp Ser Leu Tyr Leu Pro Pro Cys Tyr Asp Asp Ala Ala Lys Pro
65                      70                      75                      80
Glu Asp Val Tyr Lys Phe Glu Asp Leu Leu Ser Pro Ala Glu Tyr Glu
```

```
                              85                      90                      95
Ala Leu Gln Ser Pro Ser Glu Ala Phe Arg Asn Val Thr Ser Glu Glu
                 100                     105                     110
Ile Leu Lys Met Ile Glu Glu Asn Ser His Cys Thr Phe Val Ile Glu
                 115                     120                     125
Ala Leu Lys Ser Leu Pro Ser Asp Val Glu Ser Arg Asp Arg Gln Ala
                 130                     135                     140
Arg Cys Ile Trp Phe Leu Asp Thr Leu Ile Lys Phe Arg Ala His Arg
145                     150                     155                     160
Val Val Lys Arg Lys Ser Ala Leu Gly Pro Gly Val Pro His Ile Ile
                 165                     170                     175
Asn Thr Lys Leu Leu Lys His Phe Thr Cys Leu Thr Tyr Asn Asn Gly
                 180                     185                     190
Arg Leu Arg Asn Leu Ile Ser Asp Ser Met Lys Ala Lys Ile Thr Ala
                 195                     200                     205
Tyr Val Ile Ile Leu Ala Leu His Ile His Asp Phe Gln Ile Asp Leu
                 210                     215                     220
Thr Val Leu Gln Arg Asp Leu Lys Leu Ser Glu Lys Arg Met Met Glu
225                     230                     235                     240
Ile Ala Lys Ala Met Arg Leu Lys Ile Ser Lys Arg Arg Val Ser Val
                 245                     250                     255
Ala Ala Gly Ser Glu Glu Asp His Lys Leu Gly Thr Leu Ser Leu Pro
                 260                     265                     270
Leu Pro Pro Ala Gln Thr Ser Asp Arg Leu Ala Lys Arg Arg Lys Ile
                 275                     280                     285
Thr
289
```

```
        <210> 1214
        <211> 873
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1214
Leu Ser Leu Phe Gly Ser Arg Ala Leu Gly Arg Ser Gly Ala Arg Ala
1                   5                       10                      15
Met Ala Lys Ala Lys Lys Val Gly Ala Arg Arg Lys Ala Ser Gly Ala
                 20                      25                      30
Pro Ala Gly Ala Arg Gly Gly Pro Ala Lys Ala Asn Ser Asn Pro Phe
                 35                      40                      45
Glu Val Lys Val Asn Arg Gln Lys Phe Gln Ile Leu Gly Arg Lys Thr
                 50                      55                      60
Arg His Asp Val Gly Leu Pro Gly Val Ser Arg Ala Arg Ala Leu Arg
65                      70                      75                      80
Lys Arg Thr Gln Thr Leu Leu Lys Glu Tyr Lys Glu Arg Asp Lys Ser
                 85                      90                      95
Asn Val Phe Arg Asp Lys Arg Phe Gly Glu Tyr Asn Ser Asn Met Ser
                 100                     105                     110
Pro Glu Glu Lys Met Met Lys Arg Phe Ala Leu Glu Gln Gln Arg His
                 115                     120                     125
His Glu Lys Lys Ser Ile Tyr Asn Leu Asn Glu Asp Glu Glu Leu Thr
                 130                     135                     140
His Tyr Gly Gln Ser Leu Ala Asp Ile Glu Lys His Asn Asp Ile Val
145                     150                     155                     160
Asp Ser Asp Ser Asp Ala Glu Asp Arg Gly Thr Leu Ser Gly Glu Leu
                 165                     170                     175
Thr Ala Ala His Phe Gly Gly Gly Gly Leu Leu His Lys Lys Thr
                 180                     185                     190
Gln Gln Glu Gly Glu Glu Arg Glu Lys Pro Lys Ser Arg Lys Glu Leu
```

```
            195                    200                    205
Ile Glu Glu Leu Ile Ala Lys Ser Lys Gln Glu Lys Arg Glu Arg Gln
        210                215                220
Ala Gln Arg Glu Asp Ala Leu Glu Leu Thr Glu Lys Leu Asp Gln Asp
225                    230                235                    240
Trp Lys Glu Ile Gln Thr Leu Leu Ser His Lys Thr Pro Lys Ser Glu
                245                250                255
Asn Arg Asp Lys Lys Glu Lys Pro Lys Pro Asp Ala Tyr Asp Met Met
        260                265                270
Val Arg Glu Leu Gly Phe Glu Met Lys Ala Gln Pro Ser Asn Arg Met
        275                280                285
Lys Thr Glu Ala Glu Leu Ala Lys Glu Glu Gln Glu His Leu Arg Lys
        290                295                300
Leu Glu Ala Glu Arg Leu Arg Arg Met Leu Gly Lys Asp Glu Asp Glu
305                    310                315                    320
Asn Val Lys Lys Pro Lys His Met Ser Ala Asp Asp Leu Asn Asp Gly
                325                330                335
Phe Val Leu Asp Lys Asp Asp Arg Arg Leu Leu Ser Tyr Lys Asp Gly
        340                345                350
Lys Met Asn Val Glu Glu Asp Val Gln Glu Glu Gln Ser Lys Glu Ala
        355                360                365
Ser Asp Pro Glu Ser Asn Glu Glu Glu Gly Asp Ser Ser Gly Gly Glu
        370                375                380
Asp Thr Glu Glu Ser Asp Ser Pro Asp Ser His Leu Asp Leu Glu Ser
385                    390                395                    400
Asn Val Glu Ser Glu Glu Glu Asn Glu Lys Pro Ala Lys Glu Gln Arg
                405                410                415
Gln Thr Pro Gly Lys Gly Leu Ile Ser Gly Lys Glu Arg Ala Gly Lys
        420                425                430
Ala Thr Arg Asp Glu Leu Pro Tyr Thr Phe Ala Ala Pro Glu Ser Tyr
        435                440                445
Glu Glu Leu Arg Ser Leu Leu Leu Gly Arg Ser Met Glu Glu Gln Leu
        450                455                460
Leu Val Val Glu Arg Ile Gln Lys Cys Asn His Pro Ser Leu Ala Glu
465                    470                475                    480
Gly Asn Lys Ala Lys Leu Glu Lys Leu Phe Gly Phe Leu Leu Glu Tyr
                485                490                495
Val Gly Asp Leu Ala Thr Asp Asp Pro Pro Asp Leu Thr Val Ile Asp
        500                505                510
Lys Leu Val Val His Leu Tyr His Leu Cys Gln Met Phe Pro Glu Ser
        515                520                525
Ala Ser Asp Ala Ile Lys Phe Val Leu Arg Asp Ala Met His Glu Met
        530                535                540
Glu Glu Met Ile Glu Thr Lys Gly Arg Ala Ala Leu Pro Gly Leu Asp
545                    550                555                    560
Val Leu Ile Tyr Leu Lys Ile Thr Gly Leu Leu Phe Pro Thr Ser Asp
                565                570                575
Phe Trp His Pro Val Val Thr Pro Ala Leu Val Cys Leu Ser Gln Leu
        580                585                590
Leu Thr Lys Cys Pro Ile Leu Ser Leu Gln Asp Val Val Lys Gly Leu
        595                600                605
Phe Val Cys Cys Leu Phe Leu Glu Tyr Val Ala Leu Ser Gln Arg Phe
        610                615                620
Ile Pro Glu Leu Ile Asn Phe Leu Leu Gly Ile Leu Tyr Ile Ala Thr
625                    630                635                    640
Pro Asn Lys Ala Ser Gln Gly Ser Thr Leu Val His Pro Phe Arg Ala
                645                650                655
Leu Gly Lys Asn Ser Glu Leu Leu Val Val Ser Ala Arg Glu Asp Val
        660                665                670
Ala Thr Trp Gln Gln Ser Ser Leu Ser Leu Arg Trp Ala Ser Arg Leu
        675                680                685
Arg Ala Pro Thr Ser Thr Glu Ala Asn His Ile Arg Leu Ser Cys Leu
        690                695                700
Ala Val Gly Leu Ala Leu Leu Lys Arg Cys Val Leu Met Tyr Gly Ser
```

```
705                 710                 715                 720
Leu Pro Ser Phe His Ala Ile Met Gly Pro Leu Arg Ala Leu Leu Thr
                725                 730                 735
Asp His Leu Ala Asp Cys Ser His Pro Gln Glu Leu Gln Glu Leu Cys
            740                 745                 750
Gln Ser Thr Leu Thr Glu Met Glu Ser Gln Lys Gln Leu Cys Arg Pro
        755                 760                 765
Leu Thr Cys Glu Lys Ser Lys Pro Val Pro Leu Lys Leu Phe Thr Pro
    770                 775                 780
Arg Leu Val Lys Val Leu Glu Phe Gly Arg Lys Gln Gly Ser Ser Lys
785                 790                 795                 800
Glu Glu Gln Glu Arg Lys Arg Leu Ile His Lys His Lys Arg Glu Phe
                805                 810                 815
Lys Gly Ala Val Arg Glu Ile Arg Lys Asp Asn Gln Phe Leu Ala Arg
            820                 825                 830
Met Gln Leu Ser Glu Ile Met Glu Arg Asp Ala Glu Arg Lys Arg Lys
        835                 840                 845
Val Lys Gln Leu Phe Asn Ser Leu Ala Thr Gln Glu Gly Glu Trp Lys
    850                 855                 860
Ala Leu Lys Arg Lys Lys Phe Lys Lys
865                 870     873
```

```
<210> 1215
<211> 319
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1215
Leu Thr Lys Gln Glu Asp Cys Cys Gly Ser Ile Gly Thr Ala Trp Gly
  1                 5                 10                15
Gln Ser Lys Cys His Lys Cys Pro Gln Leu Gln Tyr Thr Gly Val Gln
            20                 25                 30
Lys Pro Gly Pro Val Arg Gly Glu Val Gly Ala Asp Cys Pro Gln Gly
        35                 40                 45
Tyr Lys Arg Leu Asn Ser Thr His Cys Gln Asp Ile Asn Glu Cys Ala
    50                 55                 60
Met Pro Gly Val Cys Arg His Gly Asp Cys Leu Asn Asn Pro Gly Ser
65                 70                 75                 80
Tyr Arg Cys Val Cys Pro Pro Gly His Ser Leu Gly Pro Ser Arg Thr
                85                 90                 95
Gln Cys Ile Ala Asp Lys Pro Glu Glu Lys Ser Leu Cys Phe Arg Leu
            100                 105                 110
Val Ser Pro Glu His Gln Cys Gln His Pro Leu Thr Thr Arg Leu Thr
        115                 120                 125
Arg Gln Leu Cys Cys Cys Ser Val Gly Lys Ala Trp Gly Ala Arg Cys
    130                 135                 140
Gln Arg Cys Pro Thr Asp Gly Thr Ala Ala Phe Lys Glu Ile Cys Pro
145                 150                 155                 160
Ala Gly Lys Gly Tyr His Ile Leu Thr Ser His Gln Thr Leu Thr Ile
            165                 170                 175
Gln Gly Glu Ser Asp Phe Ser Leu Phe Leu His Pro Asp Gly Pro Pro
            180                 185                 190
Lys Pro Gln Gln Leu Pro Glu Ser Pro Ser Gln Ala Pro Pro Pro Glu
        195                 200                 205
Asp Thr Glu Glu Glu Arg Gly Val Thr Thr Asp Ser Pro Val Ser Glu
    210                 215                 220
Glu Arg Ser Val Gln Gln Ser His Pro Thr Ala Thr Thr Thr Pro Ala
225                 230                 235                 240
Arg Pro Tyr Pro Glu Leu Ile Ser Arg Pro Ser Pro Pro Thr Met Arg
```

```
                    245                    250                    255
Trp Phe Leu Pro Asp Leu Pro Pro Ser Arg Ser Ala Val Glu Ile Ala
          · ·260                    265                    270
Pro Thr Gln Val Thr Glu Thr Asp Glu Cys Arg Leu Asn Gln Asn Ile
        275                    280                    285
Cys Gly His Gly Glu Cys Val Pro Gly Pro Pro Asp Tyr Ser Cys His
      290                    295                    300
Cys Asn Pro Gly Tyr Arg Ser His Pro Gln His Arg Tyr Cys Val
305                    310                    315                319
```

```
        <210> 1216
        <211> 815
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1216
Met Ala Gly Gly His Cys Gly Ser Phe Pro Ala Ala Ala Ala Gly Ser
  1               5                    10                    15
Gly Glu Ile Val Gln Leu Asn Val Gly Gly Thr Arg Phe Ser Thr Ser
              20                    25                    30
Arg Gln Thr Leu Met Trp Ile Pro Asp Ser Phe Phe Ser Ser Leu Leu
        35                    40                    45
Ser Gly Arg Ile Ser Thr Leu Arg Asp Glu Thr Gly Ala Ile Phe Ile
      50                    55                    60
Asp Arg Asp Pro Ala Ala Phe Ala Pro Ile Leu Asn Phe Leu Arg Thr
65                    70                    75                    80
Lys Glu Leu Asp Leu Arg Gly Val Ser Ile Asn Val Leu Arg His Glu
              85                    90                    95
Ala Glu Phe Tyr Gly Ile Thr Pro Leu Val Arg Arg Leu Leu Leu Cys
            100                    105                    110
Glu Glu Leu Glu Arg Ser Ser Cys Gly Ser Val Leu Phe His Gly Tyr
        115                    120                    125
Leu Pro Pro Pro Gly Ile Pro Ser Arg Lys Ile Asn Asn Thr Val Arg
      130                    135                    140
Ser Ala Asp Ser Arg Asn Gly Leu Asn Ser Thr Glu Gly Glu Ala Arg
145                    150                    155                    160
Gly Asn Gly Thr Gln Pro Val Leu Ser Gly Thr Gly Glu Glu Thr Val
              165                    170                    175
Arg Leu Gly Phe Pro Val Asp Pro Arg Lys Val Leu Ile Val Ala Gly
              180                    185                    190
His His Asn Trp Ile Val Ala Ala Tyr Ala His Phe Ala Val Trp Tyr
        195                    200                    205
Arg Ile Lys Glu Ser Ser Gly Trp Gln Gln Val Phe Thr Ser Pro Tyr
      210                    215                    220
Leu Asp Trp Thr Ile Glu Arg Val Ala Leu Asn Ala Lys Val Val Gly
225                    230                    235                    240
Gly Pro His Gly Asp Lys Asp Lys Met Val Ala Val Ala Ser Glu Ser
              245                    250                    255
Ser Ile Ile Leu Trp Ser Val Gln Asp Gly Gly Ser Gly Ser Glu Ile
              260                    265                    270
Gly Val Phe Ser Leu Gly Val Pro Val Asp Ala Leu Phe Phe Ile Gly
        275                    280                    285
Asn Gln Leu Val Ala Thr Ser His Thr Gly Lys Val Gly Val Trp Asn
      290                    295                    300
Ala Val Thr Gln His Trp Gln Val Gln Asp Val Val Pro Ile Thr Ser
305                    310                    315                    320
Tyr Asp Thr Ala Gly Ser Phe Leu Leu Leu Gly Cys Asn Asn Gly Ser
              325                    330                    335
Ile Tyr Tyr Ile Asp Met Gln Lys Phe Pro Leu Arg Met Lys Asp Asn
```

730

```
                  340                    345                    350
Asp Leu Leu Val Thr Glu Leu Tyr His Asp Pro Ser Asn Asp Ala Ile
             355                    360                    365
Thr Ala Leu Ser Val Tyr Leu Thr Pro Lys Thr Ser Val Ser Gly Asn
         370                    375                    380
Trp Ile Glu Ile Ala Tyr Gly Thr Ser Ser Gly Ala Val Arg Val Ile
385                    390                    395                    400
Val Gln His Pro Glu Thr Val Gly Ser Gly Pro Gln Leu Phe Gln Thr
                  405                    410                    415
Phe Thr Val His Arg Ser Pro Val Thr Lys Ile Met Leu Ser Glu Lys
             420                    425                    430
His Leu Val Ser Val Cys Ala Asp Asn Asn His Val Arg Thr Trp Thr
         435                    440                    445
Val Thr Arg Phe Arg Gly Met Ile Ser Thr Gln Pro Gly Ser Thr Pro
     450                    455                    460
Leu Ala Ser Phe Lys Ile Leu Ser Leu Glu Glu Thr Glu Ser His Gly
465                    470                    475                    480
Ser Tyr Ser Ser Gly Asn Asp Ile Gly Pro Phe Gly Glu Arg Asp Asp
                  485                    490                    495
Gln Gln Val Phe Ile Gln Lys Val Val Pro Ile Thr Asn Lys Leu Phe
             500                    505                    510
Val Arg Leu Ser Ser Thr Gly Lys Arg Ile Cys Glu Ile Gln Ala Val
         515                    520                    525
Asp Cys Thr Thr Ile Ser Ser Phe Thr Gly Arg Glu Cys Glu Gly Ser
     530                    535                    540
Ser Arg Met Gly Ser Arg Pro Arg Arg Tyr Leu Phe Thr Gly His Thr
545                    550                    555                    560
Asn Gly Ser Ile Gln Met Trp Asp Leu Thr Thr Ala Met Asp Met Val
                  565                    570                    575
Asn Lys Ser Glu Asp Lys Asp Val Gly Gly Pro Thr Glu Glu Glu Leu
             580                    585                    590
Leu Lys Leu Leu Asp Gln Cys Asp Leu Ser Thr Ser Arg Cys Ala Thr
         595                    600                    605
Pro Asn Ile Ser Pro Ala Thr Ser Val Val Gln His Ser His Leu Arg
     610                    615                    620
Glu Ser Asn Ser Ser Leu Gln Leu Gln His His Asp Thr Thr His Glu
625                    630                    635                    640
Ala Ala Thr Tyr Gly Ser Met Arg Pro Tyr Arg Glu Ser Pro Leu Leu
                  645                    650                    655
Ala Arg Ala Arg Arg Thr Glu Ser Phe His Ser Tyr Arg Asp Phe Gln
             660                    665                    670
Thr Ile Asn Leu Asn Arg Asn Val Glu Arg Ala Val Pro Glu Asn Gly
         675                    680                    685
Asn Leu Gly Pro Ile Gln Ala Glu Val Lys Gly Ala Thr Gly Glu Cys
     690                    695                    700
Asn Ile Ser Glu Arg Lys Ser Pro Gly Val Glu Ile Lys Ser Leu Arg
705                    710                    715                    720
Glu Leu Asp Ser Gly Leu Glu Val His Lys Ile Ala Glu Gly Phe Ser
                  725                    730                    735
Glu Ser Lys Lys Arg Ser Ser Glu Asp Glu Asn Glu Asn Lys Ile Glu
             740                    745                    750
Phe Arg Lys Lys Gly Gly Phe Glu Gly Gly Gly Phe Leu Gly Arg Lys
         755                    760                    765
Lys Val Pro Tyr Leu Ala Ser Ser Pro Ser Thr Ser Asp Gly Gly Thr
     770                    775                    780
Asp Ser Pro Gly Thr Ala Ser Pro Ser Pro Thr Lys Thr Thr Pro Ser
785                    790                    795                    800
Pro Arg His Lys Lys Ser Asp Ser Ser Gly Gln Glu Tyr Ser Leu
                  805                    810                    815
```

```
<210> 1217
<211> 459
<212> Amino acid
```

<213> Homo sapiens

<400> 1217

```
Arg Arg Pro Thr Arg Pro Ile Leu Thr Asp Glu Leu Phe Lys Arg Thr
 1               5                  10                  15
Ile Gln Leu Pro His Leu Lys Thr Leu Ile Leu Asn Gly Asn Lys Leu
            20                  25                  30
Glu Thr Leu Ser Leu Val Ser Cys Phe Ala Asn Asn Thr Pro Leu Glu
        35                  40                  45
His Leu Asp Leu Ser Gln Asn Leu Leu Gln His Lys Asn Asp Glu Asn
    50                  55                  60
Cys Ser Trp Pro Glu Thr Val Val Asn Met Asn Leu Ser Tyr Asn Lys
65                  70                  75                  80
Leu Ser Asp Ser Val Phe Arg Cys Leu Pro Lys Ser Ile Gln Ile Leu
                85                  90                  95
Asp Leu Asn Asn Asn Gln Ile Gln Thr Val Pro Lys Glu Thr Ile His
            100                 105                 110
Leu Met Ala Leu Arg Glu Leu Asn Ile Ala Phe Asn Phe Leu Thr Asp
        115                 120                 125
Leu Pro Gly Cys Ser His Phe Ser Arg Leu Ser Val Leu Asn Ile Glu
    130                 135                 140
Met Asn Phe Ile Leu Ser Pro Ser Leu Asp Phe Val Gln Ser Cys Gln
145                 150                 155                 160
Glu Val Lys Thr Leu Asn Ala Gly Arg Asn Pro Phe Arg Cys Thr Cys
                165                 170                 175
Glu Leu Lys Asn Phe Ile Gln Leu Glu Thr Tyr Ser Glu Val Met Met
            180                 185                 190
Val Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr Pro Leu Asn Leu Arg
        195                 200                 205
Gly Thr Arg Leu Lys Asp Val His Leu His Glu Leu Ser Cys Asn Thr
    210                 215                 220
Ala Leu Leu Ile Val Thr Ile Val Val Ile Met Leu Val Leu Gly Leu
225                 230                 235                 240
Ala Val Ala Phe Cys Cys Leu His Phe Asp Leu Pro Trp Tyr Leu Arg
                245                 250                 255
Met Leu Gly Gln Cys Thr Gln Thr Trp His Arg Val Arg Lys Thr Thr
            260                 265                 270
Gln Glu Gln Leu Lys Arg Asn Val Arg Phe His Ala Phe Ile Ser Tyr
        275                 280                 285
Ser Glu His Asp Ser Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu
    290                 295                 300
Glu Lys Glu Asp Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe
305                 310                 315                 320
Asp Pro Gly Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys
                325                 330                 335
Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu
            340                 345                 350
Trp Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu
        355                 360                 365
Asn Ser Asp His Ile Ile Leu Ile Leu Leu Glu Pro Ile Pro Phe Tyr
    370                 375                 380
Cys Ile Pro Thr Arg Tyr His Lys Leu Lys Ala Leu Leu Glu Lys Lys
385                 390                 395                 400
Ala Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly Leu Phe Trp
                405                 410                 415
Ala Asn Leu Arg Ala Ala Ile Asn Val Asn Val Leu Ala Thr Arg Glu
            420                 425                 430
Met Tyr Glu Leu Gln Thr Phe Thr Glu Leu Asn Glu Glu Ser Arg Gly
        435                 440                 445
Ser Thr Ile Ser Leu Met Arg Thr Asp Cys Leu
```

```
          450              455              459


     <210> 1218
     <211> 366
     <212>Amino acid
     <213> Homo sapiens




     <400> 1218
Pro Thr Arg Pro Pro Thr Arg Pro Pro Thr Arg Pro Leu Leu Thr Pro
 1               5               10                   15
Ser Trp Thr Ser Thr Gly Arg Met Trp Ser His Leu Asn Arg Leu Leu
            20              25                   30
Phe Trp Ser Ile Phe Ser Ser Val Thr Cys Arg Lys Ala Val Leu Asp
            35              40                   45
Cys Glu Ala Met Lys Thr Asn Glu Phe Pro Ser Pro Cys Leu Asp Ser
     50              55                   60
Lys Thr Lys Val Val Met Lys Gly Gln Asn Val Ser Met Phe Cys Ser
 65              70                   75                   80
His Lys Asn Lys Ser Leu Gln Ile Thr Tyr Ser Leu Phe Arg Arg Lys
                85                   90                   95
Thr His Leu Gly Thr Gln Asp Gly Lys Gly Glu Pro Ala Ile Phe Asn
            100             105                  110
Leu Ser Ile Thr Glu Ala His Glu Ser Gly Pro Tyr Lys Cys Lys Ala
        115             120                  125
Gln Val Thr Ser Cys Ser Lys Tyr Ser Arg Asp Phe Ser Phe Thr Ile
    130             135                  140
Val Asp Pro Val Thr Ser Pro Val Leu Asn Ile Met Val Ile Gln Thr
145             150                  155                  160
Glu Thr Asp Arg His Ile Thr Leu His Cys Leu Ser Val Asn Gly Ser
                165                  170                  175
Leu Pro Ile Asn Tyr Thr Phe Phe Glu Asn His Val Ala Ile Ser Pro
            180                  185                  190
Ala Ile Ser Lys Tyr Asp Arg Glu Pro Ala Glu Phe Asn Leu Thr Lys
            195                  200                  205
Lys Asn Pro Gly Glu Glu Glu Tyr Arg Cys Glu Ala Lys Asn Arg
    210                  215                  220
Leu Pro Asn Tyr Ala Thr Tyr Ser His Pro Val Thr Met Pro Ser Thr
225                  230                  235                  240
Gly Gly Asp Ser Cys Pro Phe Cys Leu Lys Leu Leu Leu Pro Gly Leu
                245                  250                  255
Leu Leu Leu Leu Val Val Ile Ile Leu Ile Leu Ala Phe Trp Val Leu
            260                  265                  270
Pro Lys Tyr Lys Thr Arg Lys Ala Met Arg Asn Asn Val Pro Arg Asp
    275                  280                  285
Arg Gly Asp Thr Ala Met Glu Val Gly Ile Tyr Ala Asn Ile Leu Glu
    290             295                  300
Lys Gln Ala Lys Glu Glu Ser Val Pro Glu Val Gly Ser Arg Pro Cys
305             310                  315                  320
Val Ser Thr Ala Gln Asp Glu Ala Lys His Ser Gln Glu Leu Gln Tyr
            325                  330                  335
Ala Thr Pro Val Phe Gln Glu Val Ala Pro Arg Glu Gln Glu Ala Cys
            340                  345                  350
Asp Ser Tyr Lys Ser Gly Tyr Val Tyr Ser Glu Leu Asn Phe
            355                  360                  365 366


     <210> 1219
     <211> 97
     <212>Amino acid
```

733

<213> Homo sapiens

<400> 1219

```
Phe Phe Phe Phe Glu Glu Arg Arg Thr Gly Ser His Ser Val Gly His
1               5                   10                  15
Pro Arg Met Glu Tyr Ser Gly Val Ser Met Ala His Cys Ser Leu Asn
            20                  25                  30
Leu Leu Gly Ser Ser Asn Ser Pro Ser Ser Ala Ser Gln Asp Ala Arg
        35              40                  45
Thr Thr Gly Ala Cys Gln His Ala Gln Leu Ile Gly Phe Phe Phe Phe
    50              55                  60
Val Glu Thr Ala Ser Pro Gln Val Thr His Ala Gly Leu Lys His Leu
65              70                  75                  80
Val Ser Arg Asn Pro Ser Ala Val Thr Ser Gln Ser Ala Arg Ile Lys
                85                  90                  95
Thr
97
```


<210> 1220
<211> 242
<212> Amino acid
<213> Homo sapiens

<400> 1220

```
Asn Arg Glu Gly Ala Arg Lys Ile Gln Asn Lys Trp Leu Arg Pro Ser
1               5                   10                  15
Pro Arg Ser His Arg Thr Pro Glu Ser Val Ser Pro Glu Arg Tyr Ser
            20                  25                  30
Tyr Gly Thr Ser Ser Ser Ser Lys Arg Thr Glu Gly Ser Cys Arg Arg
        35              40                  45
Arg Arg Gln Ser Ser Ser Ser Ala Asn Ser Gln Gln Gly Gln Trp Glu
    50              55                  60
Thr Gly Ser Pro Pro Thr Lys Arg Gln Arg Arg Ser Arg Gly Arg Pro
65              70                  75                  80
Ser Gly Gly Ala Lys Arg Arg Arg Gly Ala Pro Ala Ala Pro Gln
                85                  90                  95
Gln Gln Ser Glu Pro Ala Arg Pro Ser Ser Glu Gly Lys Val Thr Cys
            100                 105                 110
Asp Ile Arg Leu Arg Val Arg Ala Glu Tyr Cys Glu His Gly Pro Ala
        115                 120                 125
Leu Glu Gln Gly Val Ala Ser Arg Arg Pro Gln Ala Leu Ala Arg Gln
    130                 135                 140
Leu Asp Val Phe Gly Gln Ala Thr Ala Val Leu Arg Ser Arg Asp Leu
145                 150                 155                 160
Gly Ser Val Val Cys Asp Ile Lys Phe Ser Glu Leu Ser Tyr Leu Asp
                165                 170                 175
Ala Phe Trp Gly Asp Tyr Leu Ser Gly Ala Leu Leu Gln Ala Leu Arg
            180                 185                 190
Gly Val Phe Leu Thr Glu Ala Leu Arg Glu Ala Val Gly Arg Glu Ala
        195                 200                 205
Val Arg Leu Leu Val Ser Val Asp Glu Ala Asp Tyr Glu Ala Gly Arg
    210                 215                 220
Arg Arg Leu Leu Leu Met Glu Glu Glu Gly Gly Arg Arg Pro Thr Glu
225                 230                 235                 240
Ala Ser
```

242

```
<210> 1221
<211> 440
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1221
Ala Pro Asn Thr Ala Glu Leu Arg Ile Cys Arg Val Asn Lys Asn Cys
1               5                   10                  15
Gly Ser Val Arg Gly Gly Asp Glu Ile Phe Leu Leu Cys Asp Lys Val
            20                  25                  30
Gln Lys Asp Asp Ile Glu Val Arg Phe Val Leu Asn Asp Trp Glu Ala
        35                  40                  45
Lys Gly Ile Phe Ser Gln Ala Asp Val His Arg Gln Val Ala Ile Val
    50                  55                  60
Phe Lys Thr Pro Pro Tyr Cys Lys Ala Ile Thr Glu Pro Val Thr Val
65                  70                  75                  80
Lys Met Gln Leu Arg Arg Pro Ser Asp Gln Glu Val Ser Glu Ser Met
                85                  90                  95
Asp Phe Arg Tyr Leu Pro Asp Glu Lys Asp Thr Tyr Gly Asn Lys Ala
            100                 105                 110
Lys Lys Gln Lys Thr Thr Leu Leu Phe Gln Lys Leu Cys Gln Asp His
        115                 120                 125
Val Glu Thr Gly Phe Arg His Val Asp Gln Asp Gly Leu Glu Leu Leu
    130                 135                 140
Thr Ser Gly Asp Pro Pro Thr Leu Ala Ser Gln Ser Ala Gly Ile Thr
145                 150                 155                 160
Val Asn Phe Pro Glu Arg Pro Arg Pro Gly Leu Leu Gly Ser Ile Gly
                165                 170                 175
Glu Gly Arg Tyr Phe Lys Lys Glu Pro Asn Leu Phe Ser His Asp Ala
            180                 185                 190
Val Val Arg Glu Met Pro Thr Gly Val Ser Ser Gln Ala Glu Ser Tyr
        195                 200                 205
Tyr Pro Ser Pro Gly Pro Ile Ser Ser Gly Leu Ser His His Ala Ser
210                 215                 220
Met Ala Pro Leu Pro Ser Ser Ser Trp Ser Ser Val Ala His Pro Thr
225                 230                 235                 240
Pro Arg Ser Gly Asn Thr Asn Pro Leu Ser Ser Phe Ser Thr Arg Thr
                245                 250                 255
Leu Pro Ser Asn Ser Gln Gly Ile Pro Pro Phe Leu Arg Ile Pro Val
                260                 265                 270
Gly Asn Asp Leu Asn Ala Ser Asn Ala Cys Ile Tyr Asn Asn Ala Asp
            275                 280                 285
Asp Ile Val Gly Met Glu Ala Ser Ser Met Pro Ser Ala Asp Leu Tyr
    290                 295                 300
Gly Ile Ser Asp Pro Asn Met Leu Ser Asn Cys Ser Val Asn Met Met
305                 310                 315                 320
Thr Thr Ser Ser Asp Ser Met Gly Glu Thr Asp Asn Pro Arg Leu Leu
                325                 330                 335
Ser Met Asn Leu Glu Asn Pro Ser Cys Asn Ser Val Leu Asp Pro Arg
            340                 345                 350
Asp Leu Arg Gln Leu His Gln Met Ser Ser Ser Ser Met Ser Ala Gly
        355                 360                 365
Ala Asn Ser Asn Thr Thr Val Phe Val Ser Gln Ser Asp Ala Phe Glu
    370                 375                 380
Gly Ser Asp Phe Ser Cys Ala Asp Asn Ser Met Ile Asn Glu Ser Gly
385                 390                 395                 400
Pro Ser Asn Ser Thr Asn Pro Asn Ser His Gly Phe Val Gln Asp Ser
```

```
                    405                   410                   415
Gln Tyr Ser Gly Ile Gly Ser Met Gln Asn Glu Gln Leu Ser Asp Ser
            420                   425                   430
Phe Pro Tyr Glu Phe Phe Gln Val
            435                   440


        <210> 1222
        <211> 437
        <212>Amino acid
        <213> Homo sapiens




        <400> 1222
Arg Arg Leu Ser Leu Leu Asp Leu Gln Leu Gly Pro Leu Gly Arg Asp
 1               5                  10                  15
Pro Pro Gln Glu Cys Ser Thr Phe Ser Pro Thr Asp Ser Gly Glu Glu
            20                  25                  30
Pro Gly Gln Leu Ser Pro Gly Val Gln Phe Gln Arg Arg Gln Asn Gln
        35                  40                  45
Arg Arg Phe Ser Met Glu Asp Val Ser Lys Arg Leu Ser Leu Pro Met
    50                  55                  60
Asp Ile Arg Leu Pro Gln Glu Phe Leu Gln Lys Leu Gln Met Glu Ser
65                  70                  75                  80
Pro Asp Leu Pro Lys Pro Leu Ser Arg Met Ser Arg Arg Ala Ser Leu
             85                  90                  95
Ser Asp Ile Gly Phe Gly Lys Leu Glu Thr Tyr Val Lys Leu Asp Lys
            100                 105                 110
Leu Gly Glu Gly Thr Tyr Ala Thr Val Phe Lys Gly Arg Ser Lys Leu
            115                 120                 125
Thr Glu Asn Leu Val Ala Leu Lys Glu Ile Arg Leu Glu His Glu Glu
    130                 135                 140
Gly Ala Pro Cys Thr Ala Ile Arg Glu Val Ser Leu Leu Lys Asn Leu
145                 150                 155                 160
Lys His Ala Asn Ile Val Thr Leu His Asp Leu Ile His Thr Asp Arg
                165                 170                 175
Ser Leu Thr Leu Val Phe Glu Tyr Leu Asp Ser Asp Leu Lys Gln Tyr
            180                 185                 190
Leu Asp His Cys Gly Asn Leu Met Ser Met His Asn Val Lys Ile Phe
            195                 200                 205
Met Phe Gln Leu Leu Arg Gly Leu Ala Tyr Cys His His Arg Lys Ile
    210                 215                 220
Leu His Arg Asp Leu Lys Pro Gln Asn Leu Leu Ile Asn Glu Arg Gly
225                 230                 235                 240
Glu Leu Lys Leu Ala Asp Phe Gly Leu Ala Arg Ala Lys Ser Val Pro
            245                 250                 255
Thr Lys Thr Tyr Ser Asn Glu Val Val Thr Leu Trp Tyr Arg Pro Pro
            260                 265                 270
Asp Val Leu Leu Gly Ser Thr Glu Tyr Ser Thr Pro Ile Asp Met Trp
            275                 280                 285
Gly Val Gly Cys Ile His Tyr Glu Met Ala Thr Gly Arg Pro Leu Phe
    290                 ,295                300
Pro Gly Ser Thr Val Lys Glu Glu Leu His Lys Ile Asn Arg Leu Leu
305                 310                 315                 320
Gly Thr Pro Thr Glu Glu Thr Trp Pro Gly Val Thr Ala Phe Ser Glu
            325                 330                 335
Phe Arg Thr Tyr Ser Phe Pro Cys Tyr Leu Pro Gln Pro Leu Ile Asn
            340                 345                 350
His Ala Pro Arg Leu Asp Thr Asp Gly Ile His Leu Leu Ser Ser Leu
    355                 360                 365
Leu Leu Tyr Glu Ser Lys Ser Arg Met Ser Ala Glu Ala Ala Leu Ser
```

```
        370                    375                    380
His Ser Tyr Phe Arg Ser Leu Gly Glu Arg Val His Gln Leu Glu Asp
385                    390                    395                    400
Thr Ala Ser Ile Phe Ser Leu Lys Glu Ile Gln Leu Gln Lys Asp Pro
                405                    410                    415
Gly Tyr Arg Gly Leu Ala Phe Gln Gln Pro Gly Arg Gly Lys Asn Arg
            420                    425                    430
Arg Gln Ser Ile Phe
            435        437
```

```
        <210> 1223
        <211> 150
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1223
Cys Thr Pro His Gly Ser Ser Ser Ser Trp Lys Ile Pro Leu Trp Pro
  1                    5                    10                    15
Arg His Met Ser Pro Leu His Ser Cys Leu Pro Val Gly Thr Ser Thr
                20                    25                    30
Ser Ser Gly Pro Leu Ala Val Pro Arg Asp Cys Phe His Leu Cys Cys
            35                    40                    45
Leu Trp Gly Gln Leu Leu Leu Ile Ser Cys Pro Leu Ala Cys Gly Gln
    50                    55                    60
Gly Cys Arg Val Ala Gly Gly Gln Gln His Val Pro Gly Gln Ala Leu
65                    70                    75                    80
Gly Thr Leu Ser Pro Leu Val Ser Leu Leu Thr Trp Ala Gly Pro Ser
                85                    90                    95
Leu Asp Trp Pro His Pro Gly Ser Leu Val Thr Pro Arg Cys Pro Ile
            100                    105                    110
Leu Pro Ala Val Pro Val Leu Val Lys Gly Leu Gly Gly Trp Pro Pro
        115                    120                    125
Thr Arg Pro Ser Arg Ala Ala Pro Val Ser Gly Pro Trp Asp Gln Leu
        130                    135                    140
Pro Tyr Phe Pro Gly Leu
145                    150
```

```
        <210> 1224
        <211> 276
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1224
Leu Ile Ser Pro Val Trp Gly Asn Ile Gln Arg Ser Arg Ser Val Pro
  1                    5                    10                    15
Leu Phe Pro Ser Gly Leu Val Leu Gly Gly Ile Trp Ala Arg Gly Pro
                20                    25                    30
Leu Leu Ala Leu Leu Ala Ser Phe Asn Ile Ile Ser Val Leu Asn Ala
            35                    40                    45
Glu Cys Tyr Leu Lys Gln Ile Leu His Pro Thr Ser His Phe Thr Val
        50                    55                    60
Ser Glu Thr Pro Pro Leu Ser Gly Asn Asp Thr Asp Ser Leu Ser Cys
65                    70                    75                    80
Asp Ser Gly Ser Ser Ala Thr Ser Thr Pro Cys Val Ser Arg Leu Val
```

```
                        85                    90                    95
Thr Gly His His Leu Trp Ala Ser Lys Asn Gly Arg His Val Leu Gly
            100                   105                   110
Leu Ile Glu Asp Tyr Glu Ala Leu Leu Lys Gln Ile Ser Gln Gly Gln
           115                   120                   125
Arg Leu Leu Ala Glu Met Asp Ile Gln Thr Gln Glu Ala Pro Ser Ser
    130                   135                   140
Thr Ser Gln Glu Leu Gly Thr Lys Gly Pro His Pro Ala Pro Leu Ser
145                   150                   155                   160
Lys Phe Val Ser Ser Val Ser Thr Ala Lys Leu Thr Leu Glu Glu Ala
                165                   170                   175
Tyr Arg Arg Leu Lys Leu Leu Trp Arg Val Ser Leu Pro Glu Asp Gly
            180                   185                   190
Gln Cys Pro Leu His Cys Glu Gln Ile Gly Glu Met Lys Ala Glu Val
        195                   200                   205
Thr Lys Leu His Lys Lys Leu Phe Glu Gln Glu Lys Lys Leu Gln Asn
    210                   215                   220
Thr Met Lys Leu Leu Gln Leu Ser Lys Arg Gln Glu Lys Val Ile Phe
225                   230                   235                   240
Asp Gln Leu Val Val Thr His Lys Ile Leu Arg Lys Ala Arg Gly Asn
                245                   250                   255
Leu Glu Leu Arg Pro Gly Gly Ala His Pro Gly Thr Cys Ser Pro Ser
            260                   265                   270
Arg Pro Gly Ser
            275 276


        <210> 1225
        <211> 270
        <212>Amino acid
        <213> Homo sapiens




        <400> 1225
Leu Gly Leu Phe Cys Ile Leu Pro Ile Asp Thr Leu Cys Ala Val Leu
  1               5                    10                    15
Glu Arg Asp Thr Leu Ser Ile Arg Glu Ser Arg Leu Phe Gly Ala Val
            20                    25                    30
Val Arg Trp Ala Glu Ala Glu Cys Gln Arg Gln Gln Leu Pro Val Thr
            35                    40                    45
Phe Gly Asn Lys Gln Lys Val Leu Gly Lys Ala Leu Ser Leu Ile Arg
    50                    55                    60
Phe Pro Leu Met Thr Ile Glu Glu Phe Ala Ala Gly Pro Ala Gln Ser
65                    70                    75                    80
Gly Ile Leu Ser Asp Arg Glu Val Val Asn Leu Phe Leu His Phe Thr
                85                    90                    95
Val Asn Pro Lys Pro Arg Val Glu Tyr Ile Asp Arg Pro Arg Cys Cys
            100                   105                   110
Leu Arg Gly Lys Glu Cys Cys Ile Asn Arg Phe Gln Gln Val Glu Ser
            115                   120                   125
Arg Trp Gly Tyr Ser Gly Thr Ser Asp Arg Ile Arg Phe Thr Val Asn
    130                   135                   140
Arg Arg Ile Ser Ile Val Gly Phe Gly Leu Tyr Gly Ser Ile His Gly
145                   150                   155                   160
Pro Thr Asp Tyr Gln Val Asn Ile Gln Ile Glu Tyr Glu Lys Lys
                165                   170                   175
Gln Thr Leu Gly Gln Asn Asp Thr Gly Phe Ser Cys Asp Gly Thr Ala
            180                   185                   190
Asn Thr Phe Arg Val Met Phe Lys Glu Pro Ile Glu Ile Leu Pro Asn
    195                   200                   205
Val Cys Tyr Thr Ala Cys Ala Thr Leu Lys Gly Pro Asp Ser His Tyr
```

738

```
            210                  215                  220
Gly Thr Lys Gly Leu Lys Lys Val Val His Glu Thr Pro Ala Ala Ser
225                       230                  235                  240
Lys Thr Val Phe Phe Phe Phe Ser Ser Pro Gly Asn Asn Asn Gly Thr
                245                  250                  255
Ser Ile Glu Asp Gly Gln Ile Pro Glu Ile Ile Phe Tyr Thr
                260                  265                  270
```

```
    <210> 1226
    <211> 273
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1226
Ser Val Trp Trp Asn Ser Glu Val Lys Asp Trp Met Gln Lys Lys Arg
  1               5                  10                  15
Arg Gly Leu Arg Asn Ser Arg Ala Thr Ala Gly Asp Ile Ala His Tyr
                20                  25                  30
Tyr Arg Asp Tyr Val Val Lys Lys Gly Leu Gly His Asn Phe Val Ser
        35                  40                  45
Gly Ala Val Val Thr Ala Val Glu Trp Gly Thr Pro Asp Pro Ser Ser
      50                  55                  60
Cys Gly Ala Gln Asp Ser Ser Pro Leu Phe Gln Val Ser Gly Phe Leu
65                  70                  75                  80
Thr Arg Asn Gln Ala Gln Gln Pro Phe Ser Leu Trp Ala Arg Asn Val
                85                  90                  95
Val Leu Ala Thr Gly Thr Phe Asp Ser Pro Ala Arg Leu Gly Ile Pro
            100                 105                 110
Gly Glu Ala Leu Pro Phe Ile His His Glu Leu Ser Ala Leu Glu Ala
        115                 120                 125
Ala Thr Arg Val Gly Ala Val Thr Pro Ala Ser Asp Pro Val Leu Ile
    130                 135                 140
Ile Gly Ala Gly Leu Ser Ala Ala Asp Ala Val Leu Tyr Ala Arg His
145                 150                 155                 160
Tyr Asn Ile Pro Val Ile His Ala Phe Arg Arg Ala Val Asp Asp Pro
                165                 170                 175
Gly Leu Val Phe Asn Gln Leu Pro Lys Met Leu Tyr Pro Glu Tyr His
            180                 185                 190
Lys Val His Gln Met Met Arg Glu Gln Ser Ile Leu Ser Pro Ser Pro
        195                 200                 205
Tyr Glu Gly Tyr Arg Ser Leu Pro Arg His Gln Leu Leu Cys Phe Lys
    210                 215                 220
Glu Asp Cys Gln Ala Val Phe Gln Asp Leu Glu Gly Val Glu Lys Val
225                 230                 235                 240
Phe Gly Val Ser Leu Val Leu Val Leu Ile Gly Ser His Pro Asp Leu
                245                 250                 255
Ser Phe Leu Pro Gly Ala Gly Leu Thr Leu Gln Trp Ile Leu Thr Ser
                260                 265                 270
Arg
273
```

```
    <210> 1227
    <211> 86
    <212> Amino acid
    <213> Homo sapiens
```

```
    <400> 1227
Lys Leu Arg Pro Phe Ile Phe Ser Asn Gln Ser Leu Trp Leu His Ser
1                   5                   10                  15
Tyr Glu Gly Ala Glu Leu Glu Lys Thr Phe Ile Lys Gly Ser Trp Ala
            20                  25                  30
Thr Phe Trp Val Lys Val Ala Ser Cys Trp Ala Cys Val Leu Leu Tyr
        35                  40                  45
Leu Gly Leu Leu Leu Ala Pro Leu Cys Trp Pro Pro Thr Gln Lys Pro
    50                  55                  60
Gln Pro Leu Ile Leu Arg Arg Arg Arg His Arg Ile Ile Ser Pro Asp
65                  70                  75                  80
Asn Lys Tyr Pro Pro Val
                85  86
```

```
    <210> 1228
    <211> 249
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1228
Gln Leu Ile His Leu Ser His Gly Tyr Gln Ile His Trp Thr Asp Tyr
1                   5                   10                  15
Tyr Asn Val Gly Thr Gly Arg Pro Glu Phe Gly Thr Arg Ala Ala His
            20                  25                  30
Lys Ser Leu Ala Gly Ala Glu Leu Lys Thr Leu Lys Asp Phe Val Thr
        35                  40                  45
Val Leu Ala Lys Leu Phe Pro Gly Arg Pro Pro Val Lys Lys Leu Leu
    50                  55                  60
Glu Met Leu Gln Glu Trp Leu Ala Ser Leu Pro Leu Asp Arg Ile Pro
65                  70                  75                  80
Tyr Asn Ala Val Leu Asp Leu Val Asn Asn Lys Met Arg Ile Ser Gly
                85                  90                  95
Ile Phe Leu Thr Asn His Ile Lys Trp Val Gly Cys Gln Gly Ser Arg
            100                 105                 110
Ser Glu Leu Arg Gly Tyr Pro Cys Ser Leu Trp Lys Leu Phe His Thr
        115                 120                 125
Leu Thr Val Glu Ala Ser Thr His Pro Asp Ala Leu Val Gly Thr Gly
    130                 135                 140
Phe Glu Asp Asp Pro Gln Ala Val Leu Gln Thr Met Arg Arg Tyr Val
145                 150                 155                 160
His Thr Phe Phe Gly Cys Lys Glu Cys Gly Glu His Phe Glu Glu Met
            165                 170                 175
Ala Lys Glu Ser Met Asp Ser Val Lys Thr Pro Asp Gln Ala Ile Leu
        180                 185                 190
Trp Leu Trp Lys Lys His Asn Met Val Asn Gly Arg Leu Ala Gly Glu
        195                 200                 205
Lys Pro Leu Gly Met Gly Gly Ser Ala Arg Ala Glu Gly Gly Pro Gly
    210                 215                 220
Pro Gly Thr Ala Arg Thr Ala Arg Leu Pro Trp Gly Leu Ser Leu Ser
225                 230                 235                 240
Phe Ala Ala Ser Cys His Pro Leu Cys
                245                 249
```

```
    <210> 1229
    <211> 800
    <212>Amino acid
```

<213> Homo sapiens

<400> 1229

```
His Gly Gly Ala Thr Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys
1               5                   10                  15
Cys Pro Ser Arg Ser Ser Met Leu Thr Gly Lys Tyr Val His Asn His
            20                  25                  30
Asn Val Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala
            35                  40                  45
Met His Glu Pro Arg Thr Phe Ala Val Tyr Leu Asn Asn Thr Gly Tyr
    50                  55                  60
Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly Ser Tyr
65                  70                  75                  80
Ile Pro Pro Gly Trp Arg Glu Trp Leu Gly Leu Ile Lys Asn Ser Arg
                85                  90                  95
Phe Tyr Asn Tyr Thr Val Cys Arg Asn Gly Ile Lys Glu Lys His Gly
            100                 105                 110
Phe Asp Tyr Ala Lys Asp Tyr Phe Thr Asp Leu Ile Thr Asn Glu Ser
        115                 120                 125
Ile Asn Tyr Phe Lys Met Ser Lys Arg Met Tyr Pro His Arg Pro Val
    130                 135                 140
Met Met Val Ile Ser His Ala Glu Pro His Gly Pro Glu Asp Ser Ala
145                 150                 155                 160
Pro Gln Phe Ser Lys Leu Tyr Pro Asn Ala Ser Gln His Ile Thr Pro
                165                 170                 175
Ser Tyr Asn Tyr Ala Pro Asn Met Asp Lys His Trp Ile Met Gln Tyr
            180                 185                 190
Thr Gly Pro Met Leu Pro Ile His Met Glu Phe Thr Asn Ile Leu Gln
        195                 200                 205
Arg Lys Arg Leu Gln Thr Leu Met Ser Val Asp Asp Ser Val Glu Arg
    210                 215                 220
Leu Tyr Asn Met Leu Val Glu Thr Gly Glu Leu Glu Asn Thr Tyr Ile
225                 230                 235                 240
Ile Tyr Thr Ala Asp His Gly Tyr His Ile Gly Gln Phe Gly Leu Val
                245                 250                 255
Lys Gly Lys Ser Met Pro Tyr Asp Phe Asp Ile Arg Val Pro Phe Phe
            260                 265                 270
Ile Arg Gly Pro Ser Val Glu Pro Gly Ser Ile Val Pro Gln Ile Val
        275                 280                 285
Leu Asn Ile Asp Leu Ala Pro Thr Ile Leu Asp Ile Ala Gly Leu Asp
    290                 295                 300
Thr Pro Pro Asp Val Asp Gly Lys Ser Val Leu Lys Leu Leu Asp Pro
305                 310                 315                 320
Glu Lys Pro Gly Asn Arg Phe Arg Thr Asn Lys Lys Ala Lys Ile Trp
                325                 330                 335
Arg Asp Thr Phe Leu Val Glu Arg Gly Lys Phe Leu Arg Lys Lys Glu
            340                 345                 350
Glu Ser Ser Lys Asn Ile Gln Gln Ser Asn His Leu Pro Lys Tyr Glu
        355                 360                 365
Arg Val Lys Glu Leu Cys Gln Gln Ala Arg Tyr Gln Thr Ala Cys Glu
    370                 375                 380
Gln Pro Gly Gln Lys Trp Gln Cys Ile Glu Asp Thr Ser Gly Lys Leu
385                 390                 395                 400
Arg Ile His Lys Cys Lys Gly Pro Ser Asp Leu Leu Thr Val Arg Gln
                405                 410                 415
Ser Thr Arg Asn Leu Tyr Ala Arg Gly Phe His Asp Lys Asp Lys Glu
            420                 425                 430
Cys Ser Cys Arg Glu Ser Gly Tyr Arg Ala Ser Arg Ser Gln Arg Lys
        435                 440                 445
Ser Gln Arg Gln Phe Leu Arg Asn Gln Gly Thr Pro Lys Tyr Lys Pro
```

741

```
      450                      455                      460
Arg Phe Val His Thr Arg Gln Thr Arg Ser Leu Ser Val Glu Phe Glu
465                      470                      475                      480
Gly Glu Ile Tyr Asp Ile Asn Leu Glu Glu Glu Glu Leu Gln Val
                    485                      490                      495
Leu Gln Pro Arg Asn Ile Ala Lys Arg His Asp Glu Gly His Lys Gly
                500                      505                      510
Pro Arg Asp Leu Gln Ala Ser Ser Gly Gly Asn Arg Gly Arg Met Leu
                515                      520                      525
Ala Asp Ser Ser Asn Ala Val Gly Pro Pro Thr Thr Val Arg Val Thr
530                      535                      540
His Lys Cys Phe Ile Leu Pro Asn Asp Ser Ile His Cys Glu Arg Glu
545                      550                      555                      560
Leu Tyr Gln Ser Ala Arg Ala Trp Lys Asp His Lys Ala Tyr Ile Asp
                565                      570                      575
Glu Glu Ile Glu Ala Leu Gln Asp Lys Ile Lys Asn Leu Arg Glu Val
                580                      585                      590
Arg Gly His Leu Lys Arg Arg Lys Pro Glu Glu Cys Ser Cys Ser Lys
            595                      600                      605
Gln Ser Tyr Tyr Asn Lys Glu Lys Gly Val Lys Lys Gln Glu Lys Leu
    610                      615                      620
Lys Ser His Leu His Pro Phe Lys Glu Ala Ala Gln Glu Val Asp Ser
625                      630                      635                      640
Lys Leu Gln Leu Phe Lys Glu Asn Asn Arg Arg Arg Lys Lys Glu Arg
                645                      650                      655
Lys Glu Lys Arg Arg Gln Arg Lys Gly Glu Glu Cys Ser Leu Pro Gly
                660                      665                      670
Leu Thr Cys Phe Thr His Asp Asn Asn His Trp Gln Thr Ala Pro Phe
            675                      680                      685
Trp Asn Leu Gly Ser Phe Cys Ala Cys Thr Ser Ser Asn Asn Asn Thr
    690                      695                      700
Tyr Trp Cys Leu Arg Thr Val Asn Glu Thr His Asn Phe Leu Phe Cys
705                      710                      715                      720
Glu Phe Ala Thr Gly Phe Leu Glu Tyr Phe Asp Met Asn Thr Asp Pro
                725                      730                      735
Tyr Gln Leu Thr Asn Thr Val His Thr Val Glu Arg Gly Ile Leu Asn
            740                      745                      750
Gln Leu His Val Gln Leu Met Glu Leu Arg Ser Cys Gln Gly Tyr Lys
        755                      760                      765
Gln Cys Asn Pro Arg Pro Lys Asn Leu Asp Val Gly Asn Lys Asp Gly
    770                      775                      780
Gly Ser Tyr Asp Leu His Arg Gly Gln Leu Trp Asp Gly Trp Glu Gly
785                      790                      795                      800
```

<210> 1230
<211> 698
<212>Amino acid
<213> Homo sapiens

<400> 1230

```
His Leu Leu Ile Ala Gln Glu Leu Ala Asp Arg Val Gly Glu Gly Arg
1                   5                      10                      15
Ala Cys Trp Ser Leu Gly Asn Ala Tyr Val Ser Met Gly Arg Pro Ala
            20                      25                      30
Gln Ala Leu Thr Phe Ala Lys Lys His Leu Gln Ile Ser Gln Glu Ile
        35                      40                      45
Gly Asp Arg His Gly Glu Leu Thr Ala Arg Met Asn Val Ala Gln Leu
```

```
            50                      55                      60
Gln Leu Val Leu Gly Arg Leu Thr Ser Pro Ala Ala Ser Glu Lys Pro
65                      70                      75                      80
Asp Leu Ala Gly Tyr Glu Ala Gln Gly Ala Arg Pro Lys Arg Thr Gln
                85                      90                      95
Arg Leu Ser Ala Glu Thr Trp Asp Leu Leu Arg Leu Pro Leu Glu Arg
            100                     105                     110
Glu Gln Asn Gly Asp Ser His His Ser Gly Asp Trp Arg Gly Pro Ser
            115                     120                     125
Arg Asp Ser Leu Pro Leu Pro Val Arg Ser Arg Lys Tyr Gln Glu Gly
        130                     135                     140
Pro Asp Ala Glu Arg Arg Pro Arg Glu Gly Ser His Ser Pro Leu Asp
145                     150                     155                     160
Ser Ala Asp Val Arg Val His Val Pro Arg Thr Ser Ile Pro Arg Ala
                165                     170                     175
Pro Ser Ser Asp Glu Glu Cys Phe Phe Asp Leu Leu Thr Lys Phe Gln
            180                     185                     190
Ser Ser Arg Met Asp Asp Gln Arg Cys Pro Leu Asp Asp Gly Gln Ala
            195                     200                     205
Gly Ala Ala Glu Ala Thr Ala Ala Pro Thr Leu Glu Asp Arg Ile Ala
        210                     215                     220
Gln Pro Ser Met Thr Ala Ser Pro Gln Thr Glu Glu Phe Phe Asp Leu
225                     230                     235                     240
Ile Ala Ser Ser Gln Ser Arg Arg Leu Asp Asp Gln Arg Ala Ser Val
                245                     250                     255
Gly Ser Leu Pro Gly Leu Arg Ile Thr His Ser Asn Ala Gly His Leu
            260                     265                     270
Arg Gly His Gly Glu Pro Gln Glu Pro Gly Asp Asp Phe Phe Asn Met
        275                     280                     285
Leu Ile Lys Tyr Gln Ser Ser Arg Ile Asp Asp Gln Arg Cys Pro Pro
        290                     295                     300
Pro Asp Val Leu Pro Arg Gly Pro Thr Met Pro Asp Glu Asp Phe Phe
305                     310                     315                     320
Ser Leu Ile Gln Arg Val Gln Ala Lys Arg Met Asp Glu Gln Arg Val
                325                     330                     335
Asp Leu Ala Gly Gly Pro Gly Ala Gly Gly Arg Arg Pro Ala Arg Ala
            340                     345                     350
Pro Ala Ala Val Pro Ala Trp Cys Glu Leu Arg Pro Cys Ala His Arg
        355                     360                     365
Gln Ala His Pro Ala Pro Thr Pro Gly Arg Arg Ser His Ser His Ser
370                     375                     380
His Val Leu Pro Arg Pro Leu Pro Arg Thr Gly Thr Gly His Ala Ala
385                     390                     395                     400
Pro Arg Pro Pro Arg Pro Arg Ala Thr Gly Ser Gly Gln Ala Ala Arg
                405                     410                     415
Gly Gly Arg Ala Cys Phe His Pro Gly Leu Ala Pro Met Ala Leu Ser
            420                     425                     430
Phe Leu Pro Ser Ala Pro Ala Ala Gly Arg Thr Gly Pro Ser Ala Cys
        435                     440                     445
Arg Pro Arg Pro Gly Ala Val Arg Leu Pro His Pro Leu Pro Gln Ala
        450                     455                     460
Leu Pro Val Leu Pro Cys Pro Ala Lys Cys Glu Thr Leu Leu Ser Pro
465                     470                     475                     480
Ser Pro Ser Pro Lys Val Ser Leu Ser Arg Leu Leu Gly Pro Pro Arg
                485                     490                     495
Thr Gly Pro Cys Ser Val Pro Pro Glu Leu Val Leu Gly Trp Pro Cys
            500                     505                     510
Asp Arg His Ala Pro Pro Leu Gln Leu Arg Pro Gly Ala Gly Leu Pro
            515                     520                     525
Pro Ser Leu Ser Pro His Ser Pro Ala Arg Gly Gln Gln Pro Gln Lys
        530                     535                     540
Ala Pro Gln Thr Thr His Gly Arg Pro Gly Cys Ser Gly Ser Pro Glu
545                     550                     555                     560
Val Pro Pro Ala Glu Ser Gln Gly Pro Ala Gly Ala Ser Thr Gly Ala
```

```
                      565                        570                      575
Gly Pro Ile Ser Lys Ala Glu Gly Met Ala Gly His Glu Leu Arg His
                  580                        585                      590
Ser Lys Thr Pro Ser Gln Glu Lys Gly Gln Gly Leu Val Leu Gly Met
              595                        600                      605
Leu Thr Gly Ser Lys Ser Ser Ala Gln Ser Gly Trp Glu Val Ala Pro
          610                        615                      620
Gly Ser Val Thr Leu Thr Gln Val Gly Gly Trp Ser Val Glu Ala Gly
      625         ·          630                  635                  640
Glu Ala Ser Leu Ser Ser Thr Leu Gln Thr Pro His Met Arg Thr Pro
                  645 ·                      650                      655
Leu Leu Pro Pro Ala Gly Gly Asp Asp Ile Thr Ala Leu Ser Met Gly
          ·      660                        665                      670
Arg Gly Leu Thr Gly His Gln Val Arg Asp Pro Arg Thr Gly Arg Thr
              675                        680                      685
Cys Trp Ser Leu Arg Trp Ala Pro Gly Ala
          690                        695              698
```

```
    <210> 1231
    <211> 131
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1231
Asn Ser Ala Ala Asp Leu Ala Ile Phe Ala Leu Trp Gly Leu Lys Pro
 1                   5                       10                      15
Val Val Tyr Leu Leu Ala Ser Ser Phe Leu Gly Leu Gly Leu His Pro
              20                       25                      30
Ile Ser Gly His Phe Val Ala Glu His Tyr Met Phe Leu Lys Gly His
          35                       40                      45
Glu Thr Tyr Ser Tyr Tyr Gly Pro Leu Asn Trp Ile Thr Phe Asn Val
      50                       55                  60
Gly Tyr His Val Glu His His Asp Phe Pro Ser Ile Pro Gly Tyr Asn
 65                       70                  75                      80
Leu Pro Leu Val Arg Lys Ile Ala Pro Glu Tyr Tyr Asp His Leu Pro
                      85                  90                      95
Gln His His Ser Trp Val Lys Val Leu Trp Asp Phe Val Phe Glu Asp
              100                      105                      110
Ser Leu Gly Pro Tyr Ala Arg Val Lys Arg Val Tyr Arg Leu Ala Lys
          115                      120                      125
Asp Gly Leu
      130 131
```

```
    <210> 1232
    <211> 71
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1232
Gln Glu Ser Gly Phe Ser Cys Lys Gly Pro Gly Gln Asn Val Ala Val
 1               5                       10                      15
Thr Arg Ala His Pro Asp Ser Gln Gly Arg Arg Arg Arg Pro Glu Arg
              20                       25                      30
Gly Ala Arg Gly Gly Gln Val Phe Tyr Asn Ser Glu Tyr Gly Glu Leu
```

744

```
          35                    40                    45
Ser Glu Pro Ser Glu Glu Asp His Cys Ser Pro Ser Ala Arg Val Thr
      50                    55                    60
Phe Phe Thr Asp Asn Ser Tyr
65                    70  71


          <210> 1233
          <211> 146
          <212>Amino acid
          <213> Homo sapiens




          <400> 1233
Val Ile Val His Ala Arg Pro Ile Arg Thr Arg Ala Ser Lys Tyr Tyr
 1               5                    10                    15
Ile Pro Glu Ala Val Tyr Gly Leu Pro Ala Tyr Pro Ala Tyr Ala Gly
              20                    25                    30
Gly Gly Gly Phe Val Leu Ser Gly Ala Thr Leu His Arg Leu Ala Gly
          35                    40                    45
Ala Cys Ala Gln Val Glu Leu Phe Pro Ile Asp Asp Val Phe Leu Gly
      50                    55                    60
Met Cys Leu Gln Arg Leu Arg Leu Thr Pro Glu Pro His Pro Ala Phe
65                    70                    75                    80
Arg Thr Phe Gly Ile Pro Gln Pro Ser Ala Ala Pro His Leu Ser Thr
              85                    90                    95
Phe Asp Pro Cys Phe Tyr Arg Glu Leu Val Val Val His Gly Leu Ser
              100                   105                   110
Ala Ala Asp Ile Trp Leu Met Trp Arg Leu Leu His Gly Pro His Gly
          115                   120                   125
Pro Ala Cys Ala His Pro Gln Pro Val Ala Ala Gly Pro Phe Gln Trp
      130                   135                   140
Asp Ser
145 146


          <210> 1234
          <211> 299
          <212>Amino acid
          <213> Homo sapiens




          <400> 1234
Met Ala Ser Ala Ala Cys Ser Met Asp Pro Ile Asp Ser Phe Glu Leu
 1               5                    10                    15
Leu Asp Leu Leu Phe Asp Arg Gln Asp Gly Ile Leu Arg His Val Glu
              20                    25                    30
Leu Gly Glu Gly Trp Gly His Val Lys Asp Gln Val Leu Pro Asn Pro
          35                    40                    45
Asp Ser Asp Asp Phe Leu Ser Ser Ile Leu Gly Ser Gly Asp Ser Leu
      50                    55                    60
Pro Ser Ser Pro Leu Trp Ser Pro Glu Gly Ser Asp Ser Gly Ile Ser
65                    70                    75                    80
Glu Asp Leu Pro Ser Asp Pro Gln Asp Thr Pro Pro Arg Ser Gly Pro
              85                    90                    95
Ala Thr Ser Pro Ala Gly Cys His Pro Ala Gln Pro Gly Lys Gly Pro
              100                   105                   110
Cys Leu Ser Tyr His Pro Gly Asn Ser Cys Ser Thr Thr Thr Pro Gly
```

745

```
          115                    120                    125
Pro Val Ile Gln Gln Gln His His Leu Gly Ala Ser Tyr Leu Leu Arg
    130                    135                    140
Pro Gly Ala Gly His Cys Gln Glu Leu Val Leu Thr Glu Asp Glu Lys
145                    150                    155                    160
Lys Leu Leu Ala Lys Glu Gly Ile Thr Leu Pro Thr Gln Leu Pro Leu
              165                    170                    175
Thr Lys Tyr Glu Glu Arg Val Leu Lys Lys Ile Arg Arg Lys Ile Arg
         180                    185                    190
Asn Lys Gln Ser Ala Gln Glu Ser Arg Lys Lys Lys Glu Tyr Ile
         195                    200                    205
Asp Gly Leu Glu Thr Arg Ser Cys Cys Cys Pro Leu Pro Ser Ser Ser
210          .             215                    220
Ser Pro Pro Ser Ala Leu Leu Ala Pro Thr Lys Pro Arg Ala Leu Gly
225                    230                    235                    240
Thr Leu Arg Leu Tyr Glu Cys Ser Pro Glu Leu Cys Thr Thr Met Leu
              245                    250                    255
Pro Pro Ala Trp Leu Leu Met Leu Cys Gln Ala Pro Arg Pro Gln Asp
         260                    265                    270
Pro Asp Pro Arg Leu Thr Gln Pro Glu Lys Ser Leu Gln Glu Ala Pro
    .    275                    280                    285
Gly Gln Thr Gly Ala Ser Arg Thr Pro Arg Thr
    290                    295                    299
```

```
          <210> 1235
          <211> 1098
          <212>Amino acid
          <213> Homo sapiens
```

```
          <400> 1235
Ala Arg Gly Arg Arg Ser Arg Pro Val Trp Ala Ala Ser Trp Gly Gly
    1                  5 .                 10                     15
Arg Gly Arg Pro Ala Ala Arg Arg Arg Pro Arg Gly Leu Ala Ala Thr
         20                    25                    30
Met Gly Phe Glu Leu Asp Arg Phe Asp Gly Asp Val Asp Pro Asp Leu
         35                    40         .             45
Lys Cys Ala Leu Cys His Lys Val Leu Glu Asp Pro Leu Thr Thr Pro
    50                    55                    60
Cys Gly His Val Phe Cys Ala Gly Cys Val Leu Pro Trp Val Val Gln
65                    70                    75                    80
Glu Gly Ser Cys Pro Ala Arg Cys Arg Gly Arg Leu Ser Ala Lys Glu
              85                    90                    95
Leu Asn His Val Leu Pro Leu Lys Arg Leu Ile Leu Lys Leu Asp Ile
         100                    105                    110
Lys Cys Ala Tyr Ala Thr Arg Gly Cys Gly Arg Val Val Lys Leu Gln
    115                    120                    125
Gln Leu Pro Glu His Leu Glu Arg Cys Asp Phe Ala Pro Ala Arg Cys
    130                    135                    140
Arg His Ala Gly Cys Gly Gln Val Leu Leu Arg Arg Asp Val Glu Ala
145                    150                    155                    160
His Met Arg Asp Ala Cys Asp Ala Arg Pro Val Gly Arg Cys Gln Glu
              165         .            170                    175
Gly Cys Gly Leu Pro Leu Thr His Gly Glu Gln Arg Ala Gly Gly His
         180                    185                    190
Cys Cys Ala Arg Ala Leu Arg Ala His Asn Gly Ala Leu Gln Ala Arg
         195                    200                    205
Leu Gly Ala Leu His Lys Ala Leu Lys Lys Glu Ala Leu Arg Ala Gly
    210                    215                    220
Lys Arg Glu Lys Ser Leu Val Ala Gln Leu Ala Ala Ala Gln Leu Glu
```

```
      225                   230                   235                   240
Leu Gln Met Thr Ala Leu Arg Tyr Gln Lys Lys Phe Thr Glu Tyr Ser
                      245                   250                   255
Ala Arg Leu Asp Ser Leu Ser Arg Cys Val Ala Ala Pro Pro Gly Gly
                  260                   265                   270
Lys Gly Glu Glu Thr Lys Ser Leu Thr Leu Val Leu His Arg Asp Ser
              275                   280                   285
Gly Ser Leu Gly Phe Asn Ile Ile Gly Gly Arg Pro Ser Val Asp Asn
          290                   295                   300
His Asp Gly Ser Ser Ser Glu Gly Ile Phe Val Ser Lys Ile Val Asp
305                   310                   315                   320
Ser Gly Pro Ala Ala Lys Glu Gly Gly Leu Gln Ile His Asp Arg Ile
                  325                   330                   335
Ile Glu Val Asn Gly Arg Asp Leu Ser Arg Ala Thr His Asp Gln Ala
                  340                   345                   350
Val Glu Ala Phe Lys Thr Ala Lys Glu Pro Ile Val Val Gln Val Leu
          355                   360                   365
Arg Arg Thr Pro Arg Thr Lys Met Phe Thr Pro Pro Ser Glu Ser Gln
      370                   375                   380
Leu Val Asp Thr Gly Thr Gln Thr Asp Ile Thr Phe Glu His Ile Met
385                   390                   395                   400
Ala Leu Thr Lys Met Ser Ser Pro Ser Pro Pro Val Leu Asp Pro Tyr
                  405                   410                   415
Leu Leu Pro Glu Glu His Pro Ser Ala His Glu Tyr Tyr Asp Pro Asn
                  420                   425                   430
Asp Tyr Ile Gly Asp Ile His Gln Glu Met Asp Arg Glu Glu Leu Glu
              435                   440                   445
Leu Glu Glu Val Asp Leu Tyr Arg Met Asn Ser Gln Asp Lys Leu Gly
          450                   455                   460
Leu Thr Val Cys Tyr Arg Thr Asp Asp Glu Asp Asp Ile Gly Ile Tyr
465                   470                   475                   480
Ile Ser Glu Ile Asp Pro Asn Ser Ile Ala Ala Lys Asp Gly Arg Ile
                  485                   490                   495
Arg Glu Gly Asp Arg Ile Ile Gln Ile Asn Gly Ile Glu Val Gln Asn
              500                   505                   510
Arg Glu Glu Ala Val Ala Leu Leu Thr Ser Glu Glu Asn Lys Asn Phe
          515                   520                   525
Ser Leu Leu Ile Ala Arg Ala Glu Leu Gln Leu Asp Glu Gly Trp Met
      530                   535                   540
Asp Asp Asp Arg Asn Asp Phe Leu Asp Asp Leu His Met Asp Met Leu
545                   550                   555                   560
Glu Glu Gln His His Gln Ala Met Gln Phe Thr Ala Ser Val Leu Gln
              565                   570                   575
Gln Lys Lys His Asp Glu Asp Gly Gly Thr Thr Asp Thr Ala Thr Ile
          580                   585                   590
Leu Ser Asn Gln His Glu Lys Asp Ser Gly Val Gly Arg Thr Asp Glu
      595                   600                   605
Ser Thr Arg Asn Asp Glu Ser Ser Glu Gln Glu Asn Asn Gly Asp Asp
610                   615                   620
Ala Thr Ala Ser Ser Asn Pro Leu Ala Gly Gln Arg Lys Leu Thr Cys
625                   630                   635                   640
Ser Gln Asp Thr Leu Gly Ser Gly Asp Leu Pro Phe Ser Asn Lys Ser
                  645                   650                   655
Phe Ile Ser Pro Glu Cys Thr Gly Ala Ala Tyr Leu Gly Ile Pro Val
                  660                   665                   670
Asp Glu Cys Glu Arg Phe Arg Glu Leu Leu Glu Leu Lys Cys Gln Val
                  675                   680                   685
Lys Ser Ala Thr Pro Tyr Gly Leu Tyr Tyr Pro Ser Gly Pro Leu Asp
              690                   695                   700
Ala Gly Lys Ser Asp Pro Glu Ser Val Asp Lys Glu Leu Glu Leu Leu
705                   710                   715                   720
Asn Glu Glu Leu Arg Ser Ile Glu Leu Glu Cys Leu Ser Ile Val Arg
                  725                   730                   735
Ala His Lys Met Gln Gln Leu Lys Glu Gln Tyr Arg Glu Ser Trp Met
```

```
                    740                      745                  ·750
Leu His Asn Ser Gly Phe Arg Asn Tyr Asn Thr Ser Ile Asp Val Arg
         755                      760                  765
Arg His Glu Leu Ser Asp Ile Thr Glu Leu Pro Glu Lys Ser Asp Lys
         770                      775                  780
Asp Ser Ser Ser Ala Tyr Asn Thr Gly Glu Ser Cys Arg Ser Thr Pro
785                      790                      795                  800
Leu Thr Leu Glu Ile Ser Pro Asp Asn Ser Leu Arg Arg Ala Ala Glu
                   805                      810                  815
Gly Ile Ser Cys Pro Ser Ser Glu Gly Ala Val Gly Thr Thr Glu Ala
              820                      825                  830
Tyr Gly Pro Ala Ser Lys Asn Leu Leu Ser Ile Thr Glu Asp Pro Glu
         835                      840                  845
Val Gly Thr Pro Thr Tyr Ser Pro Ser Leu Lys Glu Leu Asp Pro Asn
    850                      855                  860
Gln Pro Leu Glu Ser Lys Glu Arg Arg Ala Ser Asp Gly Ser Arg Ser
865                      870                      875                  880
Pro Thr Pro Ser Gln Lys Leu Gly Ser Ala Tyr Leu Pro Ser Tyr His
                   885                      890                  895
His Ser Pro Tyr Lys His Ala His Ile Pro Ala His Ala Gln His Tyr
              900                      905                  910
Gln Ser Tyr Met Gln Leu Ile Gln Gln Lys Ser Ala Val Glu Tyr Ala
         915                      920                  925
Gln Ser Gln Met Ser Leu Val Ser Met Cys Lys Asp Leu Ser Ser Pro
    930                      935                  940
Thr Pro Ser Glu Pro Arg Met Glu Trp Lys Val Lys Ile Arg Ser Asp
945                      950                      955                  960
Gly Thr Arg Tyr Ile Thr Lys Arg Pro Val Arg Asp Arg Leu Leu Arg
                   965                      970                  975
Glu Arg Ala Leu Lys Ile Arg Glu Glu Arg Ser Gly Met Thr Thr Asp
              980                      985                  990
Asp Asp Ala Val Ser Glu Met Lys Met Gly Arg Tyr Trp Ser Lys Glu
         995                      1000                 1005
Glu Arg Lys Gln His Leu Val Lys Ala Lys Glu Gln Arg Arg Arg Arg
    1010                     1015                 1020
Glu Phe Met Met Gln Ser Arg Leu Asp Cys Leu Lys Glu Gln Gln Ala
1025                     1030                 1035                 1040
Ala Asp Asp Arg Lys Glu Met Asn Ile Leu Glu Leu Ser His Lys Lys
              1045                     1050                 1055
Met Met Lys Lys Arg Asn Lys Lys Ile Phe Asp Asn Trp Met Thr Ile
         1060                     1065                 1070
Gln Glu Leu Leu Thr His Gly Thr Lys Ser Pro Asp Gly Thr Arg Val
         1075                     1080                 1085
Tyr Asn Ser Phe Leu Ser Val Thr Thr Val
    1090                     1095          1098
```

```
    <210> 1236
    <211> 51
    <212>Amino acid
    <213> Homo sapiens




    <400> 1236
Phe Phe Phe Leu Val Glu Met Gly Phe Cys His Val Gly Gln Gly Gly
    1           5               10                  15
Leu Thr Leu Ile Gly Ser Ser Asn Leu Pro Ala Ser Ala Ser Lys Ser
         20                  25                  30
Ala Gly Ile Thr Gly Val Ser His Cys Ala Arg Pro Asp Phe Lys Ser
         35                  40                  45
Cys Val Glu
```

50   51

<210> 1237
<211> 70
<212>Amino acid
<213> Homo sapiens

<400> 1237

```
Leu Ala Gly Arg Lys Val Leu Leu Phe Val Ser Gly Tyr Val Val Gly
 1               5                  10                  15
Trp Gly Pro Ile Thr Trp Leu Leu Met Ser Glu Val Leu Pro Leu Arg
            20                  25                  30
Ala Arg Gly Val Ala Ser Gly Leu Cys Val Leu Ala Ser Trp Leu Thr
            35                  40                  45
Ala Phe Val Leu Thr Lys Ser Phe Leu Pro Gly Gly Val Ser Val Gln
    50                  55                  60
Pro Gln Ala Pro Gly Pro
65                  70
```


<210> 1238
<211> 114
<212>Amino acid
<213> Homo sapiens

<400> 1238

```
Phe Trp Ala Pro Gly Pro Pro Gly Val Gly Ala Ala Val Gly Asp Ala
 1               5                  10                  15
Ser Thr Arg Ser Leu Arg Glu Ser Cys Pro Ser Pro Ser Pro Gly Arg
            20                  25                  30
Leu Arg Arg Thr Thr Ala Pro Trp Ser Ser Gln Ala Arg Ala Ala Ala
            35                  40                  45
Pro Ala Pro Ser Ser Ser Cys Arg Gly Pro Asp Gly Ala Ser Ser Pro
    50                  55                  60
Arg Asp Leu Pro Trp Arg Pro Trp Lys Ile Leu Arg Arg Thr Pro Leu
65                  70                  75                  80
Ser Gly Asp Val Glu Leu Ser Gln Val His Pro Asp Gln Arg Ile Leu
                85                  90                  95
Arg Arg Phe Ile Leu Ser Arg Thr Cys Gly Asn Thr Ile Pro Gly Met
                100                 105                 110
Ala Glu
    114
```


<210> 1239
<211> 174
<212>Amino acid
<213> Homo sapiens

<400> 1239

```
Met Arg Arg Phe Leu Ser Lys Val Tyr Ser Phe Pro Met Arg Lys Leu
```


749

```
       1                    5                    10                   15
     Ile Leu Phe Leu Val Phe Pro Val Val Arg Gln Thr Pro Thr Gln His
                    20                   25                   30
     Phe Lys Asn Gln Phe Pro Ala Leu His Trp Glu His Glu Leu Gly Leu
                    35                   40                   45
     Ala Phe Thr Lys Asn Arg Met Asn Tyr Thr Asn Lys Phe Leu Leu Ile
         50                   55                   60
     Pro Glu Ser Gly Asp Tyr Phe Ile Tyr Ser Gln Val Thr Phe Arg Gly
         65                   70                   75                   80
     Met Thr Ser Glu Cys Ser Glu Ile Arg Gln Ala Gly Arg Pro Asn Lys
                    85                   90                   95
     Pro Asp Ser Ile Thr Val Val Ile Thr Lys Val Thr Asp Ser Tyr Pro
                    100                  105                  110
     Glu Pro Thr Gln Leu Leu Met Gly Thr Lys Ser Val Cys Glu Val Gly
                    115                  120                  125
     Ser Asn Trp Phe Gln Pro Ile Tyr Leu Gly Ala Met Phe Ser Leu Gln
         130                  135                  140
     Glu Gly Asp Lys Leu Met Val Asn Val Ser Asp Ile Ser Leu Val Asp
     145                  150                  155                  160
     Tyr Thr Lys Glu Asp Lys Thr Phe Phe Gly Ala Phe Leu Leu
                    165                  170          174
```

```
     <210> 1240
     <211> 425
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1240
     Phe Val Trp Asp Glu Val Ala Gln Arg Ser Gly Cys Glu Glu Arg Trp
     1                    5                    10                   15
     Leu Val Ile Asp Arg Lys Val Tyr Asn Ile Ser Glu Phe Thr Arg Arg
                    20                   25                   30
     His Pro Gly Gly Ser Arg Val Ile Ser His Tyr Ala Gly Gln Asp Ala
                    35                   40                   45
     Thr Asp Pro Phe Val Ala Phe His Ile Asn Lys Gly Leu Val Lys Lys
         50                   55                   60
     Tyr Met Asn Ser Leu Leu Ile Gly Glu Leu Ser Pro Glu Gln Pro Ser
     65                   70                   75                   80
     Phe Glu Pro Thr Lys Asn Lys Glu Leu Thr Asp Glu Phe Arg Glu Leu
                    85                   90                   95
     Arg Ala Thr Val Glu Arg Met Gly Leu Met Lys Ala Asn His Val Phe
                    100                  105                  110
     Phe Leu Leu Tyr Leu Leu His Ile Leu Leu Leu Asp Gly Ala Ala Trp
         115                  120                  125
     Leu Thr Leu Trp Val Phe Gly Thr Ser Phe Leu Pro Phe Leu Leu Cys
         130                  135                  140
     Ala Val Leu Leu Ser Ala Val Gln Ala Gln Ala Gly Trp Leu Gln His
     145                  150                  155                  160
     Asp Phe Gly His Leu Ser Val Phe Ser Thr Ser Lys Trp Asn His Leu
                    165                  170                  175
     Leu His His Phe Val Ile Gly His Leu Lys Gly Ala Pro Ala Ser Trp
                    180                  185                  190
     Trp Asn His Met His Phe Gln His His Ala Lys Pro Asn Cys Phe Arg
                    195                  200                  205
     Lys Asp Pro Asp Ile Asn Met His Pro Phe Phe Ala Leu Gly Lys
         210                  215                  220
     Ile Leu Ser Val Glu Leu Gly Lys Gln Lys Lys Lys Tyr Met Pro Tyr
     225                  230                  235                  240
     Asn His Gln His Lys Tyr Phe Phe Leu Ile Gly Pro Pro Ala Leu Leu
```

```
                    245                    250                    255
Pro Leu Tyr Phe Gln Trp Tyr Ile Phe Tyr Phe Val Ile Gln Arg Lys
                260                    265                    270
Lys Trp Val Asp Leu Ala Trp Met Ile Thr Phe Tyr Val Arg Phe Phe
                275                    280                    285
Leu Thr Tyr Val Pro Leu Leu Gly Leu Lys Ala Phe Leu Gly Leu Phe
                290                    295                    300
Phe Ile Val Arg Phe Leu Glu Ser Asn Trp Phe Val Trp Val Thr Gln
305                    310                    315                    320
Met Asn His Ile Pro Met His Ile Asp His Asp Arg Asn Met Asp Trp
                325                    330                    335
Val Ser Thr Gln Leu Gln Ala Thr Cys Asn Val His Lys Ser Ala Phe
                340                    345                    350
Asn Asp Trp Phe Ser Gly His Leu Asn Phe Gln Ile Glu His His Leu
                355                    360                    365
Phe Pro Thr Met Pro Arg His Asn Tyr His Lys Val Ala Pro Leu Val
                370                    375                    380
Gln Ser Leu Cys Ala Lys His Gly Ile Glu Tyr Gln Ser Lys Pro Leu
385                    390                    395                    400
Leu Ser Ala Phe Ala Asp Ile Ile His Ser Leu Lys Glu Ser Gly Gln
                405                    410                    415
Leu Trp Leu Asp Ala Tyr Leu His Gln
                420                    425
```

```
        <210> 1241
        <211> 152
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1241
Gln Cys Gly Gly Ile Pro Tyr Asn Thr Thr Gln Phe Leu Met Asn Asp
1                   5                   10                  15
Arg Asp Pro Glu Glu Pro Asn Leu Asp Val Pro His Gly Ile Ser His
                20                  25                  30
Pro Gly Ser Ser Gly Glu Ser Glu Ala Gly Asp Ser Asp Gly Arg Gly
                35                  40                  45
Arg Ala His Gly Glu Phe Gln Arg Lys Asp Phe Ser Glu Thr Tyr Glu
        50                  55                  60
Arg Phe His Thr Glu Ser Leu Gln Gly Arg Ser Lys Gln Glu Leu Val
65                  70                  75                  80
Arg Asp Tyr Leu Glu Leu Glu Lys Arg Leu Ser Gln Ala Glu Glu Glu
                85                  90                  95
Thr Arg Arg Leu Gln Gln Leu Gln Ala Cys Thr Gly Gln Gln Ser Cys
                100                 105                 110
Arg Gln Val Glu Glu Leu Ala Ala Glu Val Gln Arg Leu Arg Thr Glu
                115                 120                 125
Asn Gln Arg Leu Arg Gln Glu Asn Gln Met Trp Asn Arg Glu Gly Cys
                130                 135                 140
Arg Cys Asp Glu Glu Pro Gly Thr
145                 150     152
```

```
        <210> 1242
        <211> 191
        <212>Amino acid
        <213> Homo sapiens
```

751

<400> 1242

```
Ser Pro Glu Arg Ser Ser Leu Ser Val Gly Arg Glu Lys Ala Met Glu
1               5                   10                  15
Val Pro Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala Leu Cys Leu
            20                  25                  30
Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala Asp Ser Glu Val
        35                  40                  45
Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val Pro Glu Pro Tyr Tyr
    50                  55                  60
Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu Leu Phe Gly Lys Asp Val
65              70                  75                  80
Thr Gly Ser Leu Phe Arg Ile Asn Val Gly Leu Arg Gly Leu Val Ala
                85                  90                  95
Gly Gly Ile Ile Gly Ala Leu Leu Gly Thr Pro Val Gly Gly Leu Leu
            100                 105                 110
Met Ala Phe Gln Lys Tyr Ser Gly Glu Thr Val Gln Glu Arg Lys Gln
        115                 120                 125
Lys Asp Arg Lys Ala Leu His Glu Leu Lys Leu Glu Glu Trp Lys Gly
    130                 135                 140
Arg Leu Gln Val Thr Glu His Leu Pro Glu Lys Ile Glu Ser Ser Leu
145                 150                 155                 160
Gln Glu Asp Glu Pro Glu Asn Asp Ala Lys Lys Ile Glu Ala Leu Leu
                165                 170                 175
Asn Leu Pro Arg Asn Pro Ser Val Ile Asp Lys Gln Asp Lys Asp
                180                 185                 190 191
```

<210> 1243
<211> 381
<212> Amino acid
<213> Homo sapiens

<400> 1243

```
Arg Ser Leu Gly Leu Ala Val Thr Glu Met Val Pro Trp Val Arg Thr
1               5                   10                  15
Met Gly Gln Lys Leu Lys Gln Arg Leu Arg Leu Asp Val Gly Arg Glu
            20                  25                  30
Ile Cys Arg Gln Tyr Pro Leu Phe Cys Phe Leu Leu Leu Cys Leu Ser
        35                  40                  45
Ala Ala Ser Leu Leu Leu Asn Arg Tyr Ile His Ile Leu Met Ile Phe
    50                  55                  60
Trp Ser Phe Val Ala Gly Val Val Thr Phe Tyr Cys Ser Leu Gly Pro
65              70                  75                  80
Asp Ser Leu Leu Pro Asn Ile Phe Phe Thr Ile Lys Tyr Lys Pro Lys
                85                  90                  95
Gln Leu Gly Leu Gln Glu Leu Phe Pro Gln Gly His Ser Cys Ala Val
            100                 105                 110
Cys Gly Lys Val Lys Cys Lys Arg His Arg Pro Ser Leu Leu Leu Glu
        115                 120                 125
Asn Tyr Gln Pro Trp Leu Asp Leu Lys Ile Ser Ser Lys Val Asp Ala
    130                 135                 140
Ser Leu Ser Glu Val Leu Glu Leu Val Leu Glu Asn Phe Val Tyr Pro
145                 150                 155                 160
Trp Tyr Arg Asp Val Thr Asp Asp Glu Ser Phe Val Asp Glu Leu Arg
                165                 170                 175
Ile Thr Leu Arg Phe Phe Ala Ser Val Leu Ile Arg Arg Ile His Lys
                180                 185                 190
Val Asp Ile Pro Ser Ile Ile Thr Lys Lys Leu Leu Lys Ala Ala Met
```

```
              195                    200                    205
Lys His Ile Glu Val Ile Val Lys Ala Arg Gln Lys Val Lys Asn Thr
    210                    215                    220
Glu Phe Leu Gln Gln Ala Ala Leu Glu Glu Tyr Gly Pro Glu Leu His
225                    230                    235                    240
Val Ala Leu Arg Ser Arg Arg Asp Glu Leu His Tyr Leu Arg Lys Leu
              245                    250                    255
Thr Glu Leu Leu Phe Pro Tyr Ile Leu Pro Pro Lys Ala Thr Asp Cys
              260                    265                    270
Arg Ser Leu Thr Leu Leu Ile Arg Glu Ile Leu Ser Gly Ser Val Phe
              275                    280                    285
Leu Pro Ser Leu Asp Phe Leu Ala Asp Pro Asp Thr Val Asn His Leu
    290                    295                    300
Leu Ile Ile Phe Ile Asp Asp Ser Pro Pro Glu Lys Ala Thr Glu Pro
305                    310                    315                    320
Ala Ser Pro Leu Val Pro Phe Leu Gln Lys Phe Ala Glu Pro Arg Asn
              325                    330                    335
Lys Lys Pro Ser Val Leu Lys Leu Glu Leu Lys Gln Ile Arg Glu Gln
              340                    345                    350
Gln Asp Leu Leu Phe Arg Phe Met Asn Phe Leu Lys Gln Glu Gly Ala
    355                    360                    365
Val His Val Leu His Val Leu Phe Asp Cys Gly Gly Ile
370                    375                    380 381
```

```
<210> 1244
<211> 371
<212>Amino acid
<213> Homo sapiens
```

```
              <400> 1244
Gln Ser Leu Ala Glu Val Leu Gln Gln Leu Gly Ala Ser Ser Glu Leu
1                    5                    10                    15
Gln Ala Val Leu Ser Tyr Ile Phe Pro Thr Tyr Gly Val Thr Pro Asn
              20                    25                    30
His Ser Ala Phe Ser Met His Ala Leu Leu Val Asn His Tyr Met Lys
    35                    40                    45
Gly Gly Phe Tyr Pro Arg Gly Val Thr Ser Glu Ile Ala Phe His Thr
    50                    55                    60
Ile Pro Val Ile Gln Arg Ala Gly Gly Ala Val Leu Thr Lys Ala Thr
65                    70                    75                    80
Val Gln Ser Val Leu Leu Asp Ser Ala Gly Lys Ala Cys Gly Val Ser
              85                    90                    95
Val Lys Lys Gly His Glu Leu Val Asn Ile Tyr Cys Pro Ile Val Val
              100                   105                   110
Ser Asn Ala Gly Leu Phe Asn Thr Tyr Glu His Leu Leu Pro Gly Asn
    115                   120                   125
Ala Arg Cys Leu Pro Gly Val Lys Gln Gln Leu Gly Thr Val Arg Pro
    130                   135                   140
Gly Leu Gly Met Thr Ser Val Phe Ile Cys Leu Arg Gly Thr Lys Glu
145                   150                   155                   160
Asp Leu His Leu Pro Ser Thr Asn Tyr Tyr Val Tyr Tyr Asp Thr Asp
              165                   170                   175
Met Asp Gln Ala Met Glu Arg Tyr Val Ser Met Pro Arg Glu Glu Ala
    180                   185                   190
Ala Glu His Ile Pro Leu Leu Phe Phe Ala Phe Pro Ser Ala Lys Asp
    195                   200                   205
Pro Thr Trp Glu Asp Arg Phe Pro Gly Arg Ser Thr Met Ile Met Leu
    210                   215                   220
Ile Pro Thr Ala Tyr Glu Trp Phe Glu Glu Trp Gln Ala Glu Leu Lys
```

```
       225                       230                       235                       240
      Gly Lys Arg Gly Ser Asp Tyr Glu Thr Phe Lys Asn Ser Phe Val Glu
                           245                       250                       255
      Ala Ser Met Ser Val Val Leu Lys Leu Phe Pro Gln Leu Glu Gly Lys
                       260                       265                       270
      Val Glu Ser Val Thr Ala Gly Ser Pro Leu Thr Asn Gln Phe Tyr Leu
                       275                       280                       285
      Ala Ala Pro Arg Gly Ala Cys Tyr Gly Ala Asp His Asp Leu Gly Arg
           290                       295                       300
      Leu His Pro Cys Val Met Ala Ser Leu Arg Ala Gln Ser Pro Ile Pro
      305                       310                       315                       320
      Asn Leu Tyr Leu Thr Gly Gln Asp Ile Phe Thr Cys Gly Leu Val Gly
                           325                       330                       335
      Ala Leu Gln Gly Ala Leu Leu Cys Ser Ser Thr Ile Leu Lys Arg Asn
                       340                       345                       350 .
      Leu Tyr Ser Asp Leu Lys Asn Leu Asp Ser Arg Ile Arg Ala Gln Lys
                       355                       360                       365
      Lys Lys Asn
      370 371
```

```
          <210> 1245
          <211> 295
          <212>Amino acid
          <213> Homo sapiens
```

```
          <400> 1245
      Arg Pro Gln Glu Thr Arg Val Leu Gln Val Ser Cys Gly Arg Ala His
      1                   5                        10                       15
      Ser Leu Val Leu Thr Asp Arg Glu Gly Val Phe Ser Met Gly Asn Asn
                       20                       25                       30
      Ser Tyr Gly Gln Cys Gly Arg Lys Val Val Glu Asn Glu Ile Tyr Ser
                   35                       40                       45
      Glu Ser His Arg Val His Arg Met Gln Asp Phe Asp Gly Gln Val Val
           50                       55                       60
      Gln Val Ala Cys Gly Gln Asp His Ser Leu Phe Leu Thr Asp Lys Gly
      65                       70                       75                       80
      Glu Val Tyr Ser Cys Gly Trp Gly Ala Asp Gly Gln Thr Gly Leu Gly
                           85                       90                       95
      His Tyr Asn Ile Thr Ser Ser Pro Thr Lys Leu Gly Gly Asp Leu Ala
                       100                      105                      110
      Gly Val Asn Val Ile Gln Val Ala Thr Tyr Gly Asp Cys Cys Leu Ala
                   115                      120                      125
      Val Ser Ala Asp Gly Gly Leu Phe Gly Trp Gly Asn Ser Glu Tyr Leu
           130                      135                      140
      Gln Leu Ala Ser Val Thr Asp Ser Thr Gln Val Asn Val Pro Arg Cys
      145                      150                      155                      160
      Leu His Phe Ser Gly Val Gly Lys Val Arg Gln Ala Ala Cys Gly Gly
                       165                      170                      175
      Thr Gly Cys Ala Val Leu Asn Gly Glu Gly His Val Phe Val Trp Gly
                       180                      185                      190
      Tyr Gly Ile Leu Gly Lys Gly Pro Asn Leu Val Glu Ser Ala Val Pro
                   195                      200                      205
      Glu Met Ile Pro Pro Thr Leu Phe Gly Leu Thr Glu Phe Asn Pro Glu
           210                      215                      220
      Ile Gln Val Ser Arg Ile Arg Cys Gly Leu Ser His Phe Ala Ala Leu
      225                      230                      235                      240
      Thr Asn Lys Gly Glu Leu Phe Val Trp Gly Lys Asn Ile Arg Gly Cys
                       245                      250                      255
      Leu Gly Ile Gly Arg Leu Glu Asp Gln Tyr Phe Pro Trp Arg Val Thr
```

```
                    260                    265                    270
        Met Pro Gly Glu Pro Val Asp Val Ala Cys Gly Val Asp His Met Val
                275                    280                    285
        Thr Leu Ala Lys Ser Phe Ile
                290                    295
```

```
        <210> 1246
        <211> 172
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1246
Leu Pro Phe Arg Glu Trp Leu Met Ile Val Val Ser Leu Ser Ala Ala
  1                 5                  10                     15
Ala Val Ala Ala Ala Phe Met Ala Lys Cys Arg Met Val Leu Ser Ser
                20                  25                     30
Arg Tyr Phe Cys Ser His Phe Val Met Ser Ala Ser Arg Ala Arg Ile
            35                  40                  45
Arg Ser Ser Phe Ser Arg Thr Ser Ser Arg Arg Ala Gly Ala Leu Tyr
        50                  55                  60
Ser Gly Met Leu Ala Gly Trp Pro Phe Pro Cys Phe Cys Trp Val Leu
 65                 70                  75                     80
Ser Ala Ser Ser Ser Leu Ser Ser Gln Val Arg Ser Leu Arg Ser Ile
                85                  90                     95
Cys Ser Arg Phe Ser His Ala Asp Cys Ser Trp Val Arg Ala Cys Cys
            100                 105                 110
Ser Phe Ser Thr Phe Ser Thr Tyr Ala Cys Phe Ser Arg Asn Ser Ser
        115                 120                 125
Ser Ser Leu Met Thr Leu Ala Trp Ala Leu Leu Lys Ala Trp Ser Arg
    130                 135                 140
Ile Ser Met Cys Leu Arg Trp Ser Ser Leu Ala Val Arg Thr Ala Ala
145                 150                 155                 160
Asn Ser Ile Ser Asn Phe Ser Phe Ser Phe Lys Asn
                165                 170     172
```

```
        <210> 1247
        <211> 361
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1247
Met Gln Ala Val Arg Ala Thr Ala Ser Gln Ser Leu Ser Cys Ala Arg
  1                 5                  10                     15
Ala Pro Arg Glu Pro Thr Gln His Ala Leu Arg Ala His Trp Phe Pro
                20                  25                     30
Pro Ala Ala Ala Val Gln Pro Ser Pro His Ser Gly Val Ala Ala Ala
            35                  40                  45
Ala Gly Thr Trp Ser Ser Ala Phe Arg Gly Glu His Pro Leu Val Ser
        50                  55                  60
Ser Gly Leu Leu Leu Gly Val Arg Glu Gln Ser Phe Arg Leu Leu Arg
 65                 70                  75                     80
Ser Lys Ala Gly Thr His Met Tyr Leu Glu His Thr Ser His Cys Pro
                85                  90                     95
His His Asp Asp Asp Thr Ala Met Asp Thr Pro Leu Pro Arg Pro Arg
```

```
                     100                      105                      110
Pro Leu Leu Ala Val Glu Arg Thr Gly Gln Arg Pro Leu Trp Ala Pro
        115                      120                      125
Ser Leu Glu Leu Pro Lys Pro Asp Met Gln Pro Leu Pro Ala Gly Ala
        130                      135                      140
Phe Leu Glu Glu Val Ala Glu Gly Thr Pro Ala Gln Thr Glu Ser Glu
145                      150                      155                      160
Pro Lys Val Leu Asp Pro Glu Glu Asp Leu Leu Cys Ile Ala Lys Thr
                     165                      170                      175
Phe Ser Tyr Leu Arg Glu Ser Gly Trp Tyr Trp Gly Ser Ile Thr Ala
        180                      185                      190
Ser Glu Ala Arg Gln His Leu Gln Lys Met Pro Glu Gly Thr Phe Leu
        195                      200                      205
Val Arg Asp Ser Thr His Pro Ser Tyr Leu Phe Thr Leu Ser Val Lys
210                      215                      220
Thr Thr Arg Gly Pro Thr Asn Val Arg Ile Glu Tyr Ala Asp Ser Ser
225                      230                      235                      240
Phe Arg Leu Asp Ser Asn Cys Leu Ser Arg Pro Arg Ile Leu Ala Phe
                     245                      250                      255
Pro Asp Val Val Ser Leu Val Gln His Tyr Val Ala Ser Cys Thr Ala
        260                      265                      270
Asp Thr Arg Ser Asp Ser Pro Asp Pro Ala Pro Thr Pro Ala Leu Pro
        275                      280                      285
Met Pro Lys Glu Asp Ala Pro Ser Asp Pro Ala Leu Pro Ala Pro Pro
290                      295                      300
Pro Ala Thr Ala Val His Leu Lys Leu Val Gln Pro Phe Val Arg Arg
305                      310                      315                      320
Ser Ser Ala Arg Ser Leu Gln His Leu Cys Arg Leu Val Ile Asn Arg
                     325                      330                      335
Leu Val Ala Asp Val Asp Cys Leu Pro Leu Pro Arg Arg Met Ala Asp
        340                      345                      350
Tyr Leu Arg Gln Tyr Pro Phe Gln Leu
        355                      360 361
```

```
<210> 1248
<211> 279
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1248
Phe Val Asp Ile Phe Gln Arg Trp Lys Glu Cys Arg Gly Lys Ser Pro
1                   5                   10                      15
Ala Gln Ala Glu Leu Ser Tyr Leu Asn Lys Ala Lys Trp Leu Glu Met
            20                      25                      30
Tyr Gly Val Asp Met His Val Val Arg Gly Arg Asp Gly Cys Glu Tyr
        35                      40                      45
Ser Leu Gly Leu Thr Pro Thr Gly Ile Leu Ile Phe Glu Gly Ala Asn
    50                      55                      60
Lys Ile Gly Leu Phe Phe Trp Pro Lys Ile Thr Lys Met Asp Phe Lys
65                  70                      75                      80
Lys Ser Lys Leu Thr Leu Val Val Val Glu Asp Asp Asp Gln Gly Arg
                85                      90                      95
Glu Gln Glu His Thr Phe Val Phe Arg Leu Asp Ser Ala Arg Thr Cys
            100                     105                     110
Lys His Leu Trp Lys Cys Ala Val Glu His His Ala Phe Phe Arg Leu
        115                     120                     125
Arg Thr Pro Gly Asn Ser Lys Ser Asn Arg Ser Asp Phe Ile Arg Leu
130                     135                     140
Gly Ser Arg Phe Arg Phe Ser Gly Arg Thr Glu Tyr Gln Ala Thr His
```

```
       145                  150                  155                  160
Gly Ser Arg Leu Arg Arg Thr Ser Thr Phe Glu Arg Lys Pro Ser Lys
                    165                  170                  175
Arg Tyr Pro Ser Arg Arg His Ser Thr Phe Lys Ala Ser Asn Pro Val
                180                  185                  190
Ile Ala Ala Gln Leu Cys Ser Lys Thr Asn Pro Glu Val His Asn Tyr
            195                  200                  205
Gln Pro Gln Tyr His Pro Asn Ile His Pro Ser Gln Pro Arg Trp His
        210                  215                  220
Pro His Ser Pro Asn Val Arg Pro Ser Phe Gln Asp Asp Arg Ser His
    225                  230                  235                  240
Trp Lys Ala Ser Ala Ser Gly Asp Asp Ser His Phe Asp Tyr Val His
                    245                  250                  255
Asp Gln Asn Gln Lys Asn Leu Gly Gly Met Gln Ser Met Met Tyr Arg
                260                  265                  270
Asp Lys Leu Met Thr Ala Leu
            275                  279
```

<220>
<221> misc_feature
<222> (1)...(255)

```
<210> 1249
<211> 255
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(255)
<223> X = any amino acid or stop code
```

```
<400> 1249
Gly Gly Ile Arg Leu Ile Gln Lys Leu Thr Trp Arg Ser Arg Gln Gln
1                   5                   10                  15
Asp Arg Glu Asn Cys Ala Met Lys Gly Lys His Lys Asp Glu Cys His
                20                  25                  30
Asn Phe Ile Lys Val Phe Val Pro Arg Asn Asp Glu Met Val Phe Val
            35                  40                  45
Cys Gly Thr Asn Ala Phe Asn Pro Met Cys Arg Tyr Tyr Arg Val Ser
        50                  55                  60
Ile Phe Tyr Val Ile Cys Phe Phe Xaa Ser Thr Phe Leu Pro Ser Leu
    65                  70                  75                  80
Ile Cys Cys Xaa Ser Xaa Asn Leu Ser Ala Phe Gln Xaa Phe Val Leu
                85                  90                  95
Ser Leu Val Gln Xaa Lys Asn Lys Asp Arg Ile Leu Gln Met Glu Phe
            100                 105                 110
Xaa Tyr Lys Xaa Asn Ser Ile Ala Phe Lys Arg Ala Arg Xaa Ile Asp
        115                 120                 125
Met Thr Leu Ala Ile Tyr Phe Ser Phe Val Leu Ser Thr Leu Xaa Tyr
    130                 135                 140
Asp Gly Glu Glu Ile Ser Gly Leu Ala Arg Cys Pro Phe Asp Ala Arg
145                 150                 155                 160
Gln Thr Asn Gly Ala Leu Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr
                165                 170                 175
Val Ala Asp Phe Leu Ala Ser Asp Ala Val Ile Tyr Arg Ser Met Gly
            180                 185                 190
Asp Gly Ser Ala Leu Arg Thr Ile Lys Tyr Asp Ser Lys Trp Ile Lys
        195                 200                 205
Glu Pro His Phe Leu Tyr Ala Ile Lys Tyr Gly Asn Tyr Val Tyr Phe
    210                 215                 220
Ser Phe Arg Glu Ile Val Ala Thr Xaa Xaa Leu Gly Lys Ala Val Asp
225                 230                 235                 240
```

757

```
Ser Arg Val Ala Arg Tyr Glu Lys Gln Leu Val Gly Pro Thr Val
                245                 250                 255
```

```
        <210> 1250
        <211> 307
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1250
Ala Arg Ala Leu Ala Arg Glu Arg Glu Ser Glu Ser Ala Arg Ala Asp
 1               5                  10                  15
Asp Val Thr Leu Gly Val Ser Ala Ile Leu Ala Val Asp Arg Gly Gly
            20              25                  30
Asn Leu Gly Ser Ala Asp Gly Trp Ala Tyr Ile Asp Val Glu Val Arg
        35              40                  45
Arg Pro Trp Ala Phe Val Gly Pro Gly Cys Ser Arg Ser Ser Gly Asn
    50              55                  60
Gly Ser Thr Ala Tyr Gly Leu Val Gly Ser Pro Arg Trp Leu Ser Pro
65              70                  75                  80
Phe His Thr Gly Gly Ala Val Ser Leu Pro Arg Arg Pro Arg Gly Pro
            85              90                  95
Gly Pro Val Leu Gly Val Ala Arg Pro Cys Leu Arg Cys Val Leu Arg
            100             105                 110
Pro Glu His Tyr Glu Pro Gly Ser His Tyr Ser Gly Phe Ala Gly Arg
        115             120                 125
Asp Ala Ser Arg Ala Phe Val Thr Gly Asp Cys Ser Glu Ala Gly Leu
    130             135                 140
Val Asp Asp Val Ser Asp Leu Ser Ala Ala Glu Met Leu Thr Leu His
145             150                 155                 160
Asn Trp Leu Ser Phe Tyr Glu Lys Asn Tyr Val Cys Val Gly Arg Val
            165             170                 175
Thr Gly Arg Phe Tyr Gly Glu Asp Gly Leu Pro Thr Pro Ala Leu Thr
            180             185                 190
Gln Val Glu Ala Ala Ile Thr Arg Gly Leu Glu Ala Asn Lys Leu Gln
        195             200                 205
Leu Gln Glu Lys Gln Thr Phe Pro Pro Cys Asn Ala Glu Trp Ser Ser
    210             215                 220
Ala Arg Gly Ser Arg Leu Trp Cys Ser Gln Lys Ser Gly Gly Val Ser
225             230                 235                 240
Arg Asp Trp Ile Gly Val Pro Arg Lys Leu Tyr Lys Pro Gly Ala Lys
            245             250                 255
Glu Pro Arg Cys Val Cys Val Arg Thr Thr Gly Pro Pro Ser Gly Gln
            260             265                 270
Met Pro Asp Asn Pro Pro His Arg Asn Arg Gly Asp Leu Asp His Pro
            275             280                 285
Asn Leu Ala Glu Tyr Thr Gly Cys Pro Pro Leu Ala Ile Thr Cys Ser
    290             295                 300
Phe Pro Leu
305     307
```

```
        <210> 1251
        <211> 100
        <212>Amino acid
        <213> Homo sapiens
```

<400> 1251

```
Tyr Phe Ile Ile Cys Arg Asp Gly Val Leu Leu Phe Cys Pro Gly Trp
 1               5                   10                  15
Ser Gln Thr Pro Gly Ala Gln Ala Ile Leu Leu His Trp Ala Thr Gln
            20                  25                  30
Asn Ala Gly Met Thr Asp Met Ser His Ser Ala Gln Pro Ile Tyr Leu
        35                  40                  45
Phe Ile Tyr Leu Ile Arg Thr Arg Ser His Tyr Val Ala Gln Ala Gly
    50                  55                  60
Gln Leu Leu Asp Ser Asn Asp Ser Pro Asn Val Ala Ser Gln Asn Val
65                  70                  75                  80
Gly Ile Thr Gly Met Ser His His Ala Trp Leu Lys Ile Val Leu Tyr
                85                  90                  95
Phe Cys Ile Ile
            100
```

<210> 1252
<211> 464
<212>Amino acid
<213> Homo sapiens

<400> 1252

```
Pro Ala Ala Arg Pro Pro Ser Leu Val Arg Leu Ser Pro Ser Pro Pro
 1               5                   10                  15
Lys Pro Arg Ala Arg Ala Arg Ala Pro Gln Ser Val Glu Pro Ala Ala
            20                  25                  30
Pro Leu Val Ala Arg Gly Ser Ser Pro Pro Ala Arg Pro Ala Pro Ala
        35                  40                  45
Met Val Arg Pro Arg Arg Ala Pro Tyr Arg Ser Gly Ala Gly Gly Pro
    50                  55                  60
Leu Gly Gly Arg Gly Arg Pro Pro Arg Pro Leu Val Val Arg Ala Val
65                  70                  75                  80
Arg Ser Arg Ser Trp Pro Ala Ser Pro Arg Gly Pro Gln Pro Pro Arg
                85                  90                  95
Ile Arg Ala Arg Ser Ala Pro Pro Met Glu Gly Ala Arg Val Phe Gly
            100                 105                 110
Ala Leu Gly Pro Ile Gly Pro Ser Ser Pro Gly Leu Thr Leu Gly Gly
        115                 120                 125
Leu Ala Val Ser Glu His Arg Leu Ser Asn Lys Leu Leu Ala Trp Ser
    130                 135                 140
Gly Val Leu Glu Trp Gln Glu Lys Arg Arg Pro Tyr Ser Asp Ser Thr
145                 150                 155                 160
Ala Lys Leu Lys Arg Thr Leu Pro Cys Gln Ala Tyr Val Asn Gln Gly
                165                 170                 175
Glu Asn Leu Glu Thr Asp Gln Trp Pro Gln Lys Leu Ile Met Gln Leu
            180                 185                 190
Ile Pro Gln Gln Leu Leu Thr Thr Leu Gly Pro Leu Phe Arg Asn Ser
            195                 200                 205
Gln Leu Ala Gln Phe His Phe Thr Asn Arg Asp Cys Asp Ser Leu Lys
    210                 215                 220
Gly Leu Cys Arg Ile Met Gly Asn Gly Phe Ala Gly Cys Met Leu Phe
225                 230                 235                 240
Pro His Ile Ser Pro Cys Glu Val Arg Val Leu Met Leu Leu Tyr Ser
                245                 250                 255
Ser Lys Lys Lys Ile Phe Met Gly Leu Ile Pro Tyr Asp Gln Ser Gly
            260                 265                 270
Phe Val Ser Ala Ile Arg Gln Val Ile Thr Thr Arg Lys Gln Ala Val
    275                 280                 285
```

```
Gly Pro Gly Gly Val Asn Ser Gly Pro Val Gln Ile Val Asn Asn Lys
    290                 295                 300
Phe Leu Ala Trp Ser Gly Val Met Glu Trp Gln Glu Pro Arg Pro Glu
305                 310                 315                 320
Pro Asn Ser Arg Ser Lys Arg Trp Leu Pro Ser His Val Tyr Val Asn
                325                 330                 335
Gln Gly Glu Ile Leu Arg Thr Glu Gln Trp Pro Arg Lys Leu Tyr Met
            340                 345                 350
Gln Leu Ile Pro Gln Gln Leu Leu Thr Thr Leu Val Pro Leu Phe Arg
        355                 360                 365
Asn Ser Arg Leu Val Gln Phe His Phe Thr Lys Asp Leu Glu Thr Leu
    370                 375                 380
Lys Ser Leu Cys Arg Ile Met Asp Asn Gly Phe Ala Gly Cys Val His
385                 390                 395                 400
Phe Ser Tyr Lys Ala Ser Cys Glu Ile Arg Val Leu Met Leu Leu Tyr
                405                 410                 415
Ser Ser Glu Lys Lys Ile Phe Ile Gly Leu Ile Pro His Asp Gln Gly
            420                 425                 430
Asn Phe Val Asn Gly Ile Arg Arg Val Ile Ala Asn Gln Gln Gln Val
        435                 440                 445
Leu Gln Arg Asn Leu Glu Gln Glu Gln Gln Arg Gly Met Gly Gly
    450                 455                 460             464
```

```
<210> 1253
<211> 214
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1253
Gly Arg Pro Ala Leu Gly Arg Glu Ala Pro Pro Gln Ala Gly Leu Ser
1               5                   10                  15
Ser Thr Pro Pro Pro Cys Ser Glu Thr Cys Thr Met Gly Pro His Ser
            20                  25                  30
Ile Leu Arg Thr Val His Cys Arg Pro Thr Lys Thr Pro Pro Glu Pro
        35                  40                  45
Ser Ala Glu Pro His Pro Leu Ser Leu Leu Thr Ser Ser Asn Thr Ser
    50                  55                  60
Leu Ala Gly Thr Ser Leu Gly Arg Asp Leu Thr Pro Gly Gly Gly Lys
65                  70                  75                  80
Pro Pro Ser Gly Gln Thr Pro Arg Asn Pro Glu Ser Pro Arg His Arg
                85                  90                  95
Leu Gly Ser Pro Arg Gly Arg Arg Trp Leu Ala Ser Pro Thr Pro Thr
            100                 105                 110
Gly Ser Gly Arg Ser Gly Pro Ala Ser Arg Gly Gln Arg Arg Leu Ser
        115                 120                 125
Cys Ala Ala Gln Asp Pro Thr Ser Glu Gly Ala Ser Val Gly Ala Met
    130                 135                 140
Glu Ala Gly Leu Gly Pro Pro Thr Ala Ala Pro Arg Gly Val Val Ser
145                 150                 155                 160
Glu Ala Ala Glu Ser Leu Gly Gly Thr Leu Ser Trp Gly Ala Trp Gly
                165                 170                 175
Arg Pro Pro Ala Gly Pro Ser Gly Leu Ala Gly Arg Arg Ser Arg Arg
            180                 185                 190
Glu Ala Leu Arg Pro Asp Arg Lys Glu Ala Ser Val Met Met Ala Ala
        195                 200                 205
Val Ser Ala Ile Gln Pro
    210                 214
```

```
        <210> 1254
        <211> 198
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(198)
        <223> X = any amino acid or stop code
```

```
        <400> 1254
Pro Gly Val Pro Thr His Gly Trp Pro Arg Ser Arg Val Leu Thr Arg
 1               5                  10                  15
Val Arg Gly Ser Arg Gly Ser Gly Lys Met Ala Ala Ala Val Val Leu
            20                  25                  30
Ala Ala Gly Leu Arg Ala Ala Arg Arg Ala Val Ala Ala Thr Gly Val
            35                  40                  45
Arg Gly Gly Gln Val Arg Gly Ala Ala Gly Val Thr Asp Gly Asn Glu
    50                  55                  60
Val Ala Lys Ala Gln Gln Ala Thr Pro Gly Gly Ala Ala Pro Thr Ile
 65                  70                  75                  80
Phe Ser Arg Ile Leu Asp Lys Ser Leu Pro Ala Asp Ile Leu Tyr Glu
                85                  90                  95
Asp Gln Gln Cys Leu Val Phe Arg Asp Val Ala Pro Gln Ala Pro Val
            100                 105                 110
His Phe Leu Val Ile Pro Lys Lys Pro Ile Pro Arg Ile Ser Gln Ala
            115                 120                 125
Glu Glu Glu Asp Gln Gln Leu Thr Tyr Val Pro Pro Leu Ser Leu Xaa
    130                 135                 140
Leu Leu Gly His Leu Leu Leu Val Ala Lys Gln Thr Ala Lys Ala Glu
145                 150                 155                 160
Gly Leu Gly Asp Gly Tyr Arg Leu Val Ile Asn Asp Gly Lys Leu Gly
                165                 170                 175
Ala Gln Ser Val Tyr His Leu His Ile His Val Leu Gly Gly Arg Gln
            180                 185                 190
Leu Gln Trp Pro Pro Gly
        195         198
```

```
        <210> 1255
        <211> 458
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(458)
        <223> X = any amino acid or stop code
```

```
        <400> 1255
Val Pro Asn Tyr Leu Pro Ser Val Ser Ser Ala Ile Gly Gly Glu Val
 1               5                  10                  15
Pro Gln Arg Tyr Val Trp Arg Phe Cys Ile Gly Leu His Ser Ala Pro
            20                  25                  30
```

```
Arg Phe Leu Val Ala Phe Ala Tyr Trp Asn His Tyr Leu Ser Cys Thr
        35                  40                  45
Ser Pro Cys Ser Cys Tyr Arg Pro Leu Cys Arg Leu Asn Phe Gly Leu
    50                  55                  60
Asn Val Val Glu Asn Leu Ala Leu Leu Val Leu Thr Tyr Val Ser Ser
65                  70                  75                  80
Ser Glu Asp Phe Thr Trp Val Pro Gly Xaa Gly Arg Ser Gly Glu Val
            85                  90                  95
Phe Pro Glu Gly Thr Gly Leu Pro Leu Pro His Ser Asp Leu Pro Thr
            100                 105                 110
Ser Trp Cys Gly His Ser Leu Gln Cys Gly Ser Gln Ser Ser Phe Pro
    115                 120                 125
Pro Ala Ile His Glu Asn Ala Phe Ile Val Phe Ile Ala Ser Ser Leu
    130                 135                 140
Gly His Met Leu Leu Thr Cys Ile Leu Trp Arg Leu Thr Lys Lys His
145                 150                 155                 160
Thr Val Ser Gln Glu Asp Gly Leu Ser Leu Ala Gly Ala Pro Arg Gln
            165                 170                 175
Pro Arg Arg Lys Ser Arg Thr Ser Val Leu Arg Ile Arg Val Met Val
            180                 185                 190
Arg Trp Glu Leu Ser Ser Asn Gly Asn Pro Gly Arg Gly Val Leu Gly
        195                 200                 205
Leu Gly Leu Gly Leu Gly Asn Lys Leu Arg Val Val Gly Gln Asn Leu
    210                 215                 220
Gly Leu Xaa His Cys Val Trp Val Val Trp Glu Thr Gly Glu Xaa Lys
225                 230                 235                 240
Arg Trp Arg Leu Gln Met Gly Ile Glu Xaa Gly Val Ala Ser Arg Arg
            245                 250                 255
Gln Xaa Val Arg Asn Ser Val Arg Gly Leu Val Cys His Asn Ser Ser
            260                 265                 270
Ala Pro Pro Met Tyr Met Gly Phe Phe Ser Pro Thr Val Phe Gly Gly
    275                 280                 285
Gly Val Gly Gly Xaa Leu His Val Thr Phe Ile Leu His Pro Pro Glu
    290                 295                 300
Val Glu Ala Ala Gly Ile Pro Leu Leu Leu Gly Pro Ser Leu Pro Gln
305                 310                 315                 320
Arg Gln Gly Arg Glu His Ile Val Val Ile Leu Ala Ala Pro Ala Cys
            325                 330                 335
Ala Pro Phe His Asp Arg Xaa Trp Glu Pro Arg Glu Ile Arg Pro Ser
            340                 345                 350
Pro Xaa Glu Leu Gly Leu Arg Gly Glu Pro Thr Leu Ser Tyr Pro Ala
    355                 360                 365
Ser Cys Arg Val Ile Arg Gln Pro Ile Pro Xaa Asp Arg Lys Ser Tyr
    370                 375                 380
Ser Trp Lys Gln Arg Leu Phe Ile Ile Asn Phe Ile Ser Phe Phe Ser
385                 390                 395                 400
Ala Leu Ala Val Tyr Phe Arg His Asn Met Tyr Cys Glu Ala Gly Val
            405                 410                 415
Tyr Thr Ile Phe Ala Ile Leu Glu Tyr Thr Val Val Leu Thr Asn Met
            420                 425                 430
Ala Phe His Met Thr Ala Trp Trp Asp Phe Gly Asn Lys Glu Leu Leu
    435                 440                 445
Ile Thr Ser Gln Pro Glu Glu Lys Arg Phe
    450                 455                 458
```

```
<210> 1256
<211> 83
<212> Amino acid
<213> Homo sapiens
```

```
        <400> 1256
Ile Asp Leu Leu Glu Ile Arg Asn Gly Pro Arg Ser His Glu Ser Phe
1               5                   10                  15
Gln Glu Met Asp Leu Asn Asp Asp Trp Lys Leu Ser Lys Asp Glu Val
            20                  25                  30
Lys Ala Tyr Leu Lys Lys Glu Phe Glu Lys His Gly Ala Val Val Asn
            35                  40                  45
Glu Ser His His Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp
    50                  55                  60
Glu Asp Lys Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His
65                  70                  75                  80
Asp Glu Leu
        83
```

```
        <210> 1257
        <211> 203
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1257
Pro Arg Val Arg Gly Arg Val Gly Lys Glu Gly Ala Ala Ala Lys Pro
1               5                   10                  15
Arg Ser Leu Leu Arg Arg Phe Gln Leu Leu Ser Trp Ser Val Cys Gly
            20                  25                  30
Gly Asn Lys Asp Pro Trp Val Gln Glu Leu Met Ser Cys Leu Asp Leu
            35                  40                  45
Lys Glu Cys Gly His Ala Tyr Ser Gly Ile Val Ala His Gln Lys His
    50                  55                  60
Leu Leu Pro Thr Ser Pro Pro Ile Ser Gln Ala Ser Glu Gly Ala Ser
65                  70                  75                  80
Ser Asp Ile His Thr Pro Ala Gln Met Leu Leu Ser Thr Leu Gln Ser
                85                  90                  95
Thr Gln Arg Pro Thr Leu Pro Val Gly Ser Leu Ser Ser Asp Lys Glu
            100                 105                 110
Leu Thr Arg Pro Asn Glu Thr Thr Ile His Thr Ala Gly His Ser Leu
            115                 120                 125
Ala Ala Gly Pro Glu Ala Gly Glu Asn Gln Lys Gln Pro Glu Lys Asn
    130                 135                 140
Ala Gly Pro Thr Ala Arg Thr Ser Ala Thr Val Pro Val Leu Cys Leu
145                 150                 155                 160
Leu Ala Ile Ile Phe Ile Leu Thr Ala Ala Leu Ser Tyr Val Leu Cys
                165                 170                 175
Lys Arg Arg Arg Gly Gln Ser Pro Gln Ser Ser Pro Asp Leu Pro Val
            180                 185                 190
His Tyr Ile Pro Val Ala Pro Asp Ser Asn Thr
            195                 200                 203
```

```
        <210> 1258
        <211> 195
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1258
```

```
Leu Ile Ile Ser Asn Phe Leu Lys Ala Lys Gln Lys Pro Gly Ser Thr
 1               5                  10                  15
Pro Asn Leu Gln Gln Lys Lys Ser Gln Ala Arg Leu Ala Pro Asp Ile
            20                  25                  30
Val Ser Ala Ser Gln Tyr Arg Lys Phe Asp Glu Phe Gln Thr Gly Ile
        35                  40                  45
Leu Ile Tyr Glu Leu Leu His Gln Pro Asn Pro Phe Glu Val Arg Ala
     50                  55                  60
Gln Leu Arg Glu Arg Asp Tyr Arg Gln Glu Asp Leu Pro Pro Leu Pro
 65                  70                  75                  80
Ala Leu Ser Leu Tyr Ser Pro Gly Leu Gln Gln Leu Ala His Leu Leu
                85                  90                  95
Leu Glu Ala Asp Pro Ile Lys Arg Ile Arg Ile Gly Glu Ala Lys Arg
            100                 105                 110
Val Leu Gln Cys Leu Leu Trp Gly Pro Arg Arg Glu Leu Val Gln Gln
        115                 120                 125
Pro Gly Thr Ser Glu Glu Ala Leu Cys Gly Thr Leu His Asn Trp Ile
    130                 135                 140
Asp Met Lys Arg Ala Leu Met Met Met Lys Phe Ala Glu Lys Ala Val
145                 150                 155                 160
Asp Arg Arg Arg Gly Val Glu Leu Glu Asp Trp Leu Cys Cys Gln Tyr
                165                 170                 175
Leu Ala Ser Ala Glu Pro Gly Ala Leu Leu Gln Ser Leu Lys Leu Leu
            180                 185                 190
Gln Leu Leu
    195
```

```
<210> 1259
<211> 672
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(672)
<223> X = any amino acid or stop code
```

```
<400> 1259
Lys Arg Gly Leu Ile Val Val Met Ala His Glu Met Ile Gly Thr Gln
 1               5                  10                  15
Ile Val Thr Glu Arg Gly Val Ala Leu Leu Glu Ser Gly Thr Glu Lys
            20                  25                  30
Val Leu Leu Ile Asp Ser Arg Pro Phe Val Glu Tyr Asn Thr Ser His
        35                  40                  45
Ile Leu Glu Ala Ile Asn Ile Asn Cys Ser Lys Leu Met Lys Arg Arg
     50                  55                  60
Leu Gln Gln Asp Lys Val Leu Ile Thr Glu Leu Ile Gln His Ser Ala
 65                  70                  75                  80
Lys His Lys Val Asp Ile Asp Cys Ser Gln Lys Val Val Val Tyr Asp
                85                  90                  95
Gln Ser Ser Gln Asp Val Ala Ser Leu Ser Ser Asp Cys Phe Leu Thr
            100                 105                 110
Val Leu Leu Gly Lys Leu Glu Lys Ser Phe Asn Ser Val His Leu Leu
        115                 120                 125
Ala Gly Gly Phe Ala Glu Phe Ser Arg Cys Phe Pro Gly Leu Cys Glu
    130                 135                 140
Gly Lys Ser Thr Leu Val Pro Thr Cys Ile Ser Gln Pro Cys Leu Pro
145                 150                 155                 160
Val Ala Asn Ile Gly Pro Thr Arg Ile Leu Pro Asn Leu Tyr Leu Gly
```

```
                    165                    170                    175
Cys Gln Arg Asp Val Leu Asn Lys Glu Leu Met Gln Gln Asn Gly Ile
            180                    185                    190
Gly Tyr Val Leu Asn Ala Ser Asn Thr Cys Pro Lys Pro Asp Phe Ile
            195                    200                    205
Pro Glu Ser His Phe Leu Arg Val Pro Val Asn Asp Ser Phe Cys Glu
        210                    215                    220
Lys Ile Leu Pro Trp Leu Asp Lys Ser Val Asp Phe Ile Glu Lys Ala
225                    230                    235                    240
Lys Ala Ser Asn Gly Cys Val Leu Val His Cys Leu Ala Gly Ile Ser
                245                    250                    255
Arg Ser Ala Thr Ile Ala Ile Ala Tyr Ile Met Lys Arg Met Asp Met
            260                    265                    270
Ser Leu Asp Glu Ala Tyr Arg Phe Val Lys Glu Lys Arg Pro Thr Ile
            275                    280                    285
Ser Pro Asn Phe Asn Phe Leu Gly Gln Leu Leu Asp Tyr Glu Lys Lys
        290                    295                    300
Ile Lys Asn Gln Thr Gly Ala Ser Gly Pro Lys Ser Lys Leu Lys Leu
305                    310                    315                    320
Leu His Leu Glu Lys Pro Asn Glu Pro Val Pro Ala Val Ser Glu Gly
                325                    330                    335
Gly Gln Lys Ser Glu Thr Pro Leu Ser Pro Pro Cys Ala Asp Ser Ala
            340                    345                    350
Thr Ser Glu Ala Ala Gly Gln Arg Pro Val His Pro Ala Ser Val Pro
            355                    360                    365
Ser Val Pro Ser Val Gln Pro Ser Leu Leu Glu Asp Ser Pro Leu Val
        370                    375                    380
Gln Ala Leu Ser Gly Leu His Leu Ser Ala Asp Arg Leu Glu Asp Ser
385                    390                    395                    400
Asn Lys Leu Lys Arg Ser Phe Ser Leu Asp Ile Lys Ser Val Ser Tyr
                405                    410                    415
Ser Ala Ser Met Ala Ala Ser Leu His Gly Phe Ser Ser Ser Glu Asp
            420                    425                    430
Ala Leu Glu Tyr Tyr Lys Pro Ser Thr Thr Leu Asp Gly Thr Asn Lys
            435                    440                    445
Leu Cys Gln Phe Ser Pro Val Gln Glu Leu Cys Gly Ala Asp Ser Arg
        450                    455                    460
Asn Gln Ser Xaa Xaa Gly Gly Ser Gln Pro Ser Pro Arg Ser Cys Arg
465                    470                    475                    480
Pro Pro Gly Leu Gln Thr Ala Arg Ala Ser Asp Cys Ile Arg Ser Glu
                485                    490                    495
Pro Ala Ala Val Ala Pro Pro Arg Gly Pro Phe Tyr Leu His Cys Ile
            500                    505                    510
Glu Val Gly Ala Trp Arg Thr Ile Thr Thr Pro Ala Ser Phe Ser Ala
            515                    520                    525
Phe Pro Pro Pro Ala Ala Pro His Glu Val Cys Trp Pro Gly Pro Xaa
        530                    535                    540
Gly Leu Ala Pro Asp Ile Leu Ala Pro Gln Thr Ser Thr Pro Ser Leu
545                    550                    555                    560
Thr Ser Ser Trp Tyr Phe Ala Thr Glu Ser Ser His Phe Tyr Ser Ala
                565                    570                    575
Ser Ala Ile Tyr Gly Gly Ser Ala Ser Tyr Ser Ala Tyr Ser Cys Ser
            580                    585                    590
Gln Leu Pro Thr Cys Gly Asp Gln Val Tyr Ser Val Arg Arg Arg Gln
        595                    600                    605
Lys Pro Ser Asp Arg Ala Asp Ser Arg Arg Ser Trp His Glu Glu Ser
    610                    615                    620
Pro Phe Glu Lys Gln Phe Lys Arg Arg Ser Cys Gln Met Glu Phe Gly
625                    630                    635                    640
Glu Ser Ile Met Ser Glu Asn Arg Ser Arg Glu Glu Leu Gly Lys Val
                645                    650                    655
Gly Ser Gln Ser Ser Phe Ser Gly Ser Met Glu Ile Ile Glu Val Ser
            660                    665                    670    672
```

<210> 1260
<211> 260
<212>Amino acid
<213> Homo sapiens

<400> 1260

Ala	Ser	Ser	Ser	Lys	Arg	Val	Ser	Arg	Gln	Lys	Met	Leu	Gln	Leu	Trp
1				5					10					15	
Lys	Leu	Val	Leu	Leu	Cys	Gly	Val	Leu	Thr	Gly	Thr	Ser	Glu	Ser	Leu
			20				25					30			
Leu	Asp	Asn	Leu	Gly	Asn	Asp	Leu	Ser	Asn	Val	Val	Asp	Lys	Leu	Glu
		35				40					45				
Pro	Val	Leu	His	Glu	Gly	Leu	Glu	Thr	Val	Asp	Asn	Thr	Leu	Lys	Gly
	50				55					60					
Ile	Leu	Glu	Lys	Leu	Lys	Val	Asp	Leu	Gly	Val	Leu	Gln	Lys	Ser	Ser
65				70				75							80
Ala	Trp	Gln	Leu	Ala	Lys	Gln	Lys	Ala	Gln	Glu	Ala	Glu	Lys	Leu	Leu
			85				90					95			
Asn	Asn	Val	Ile	Ser	Lys	Leu	Leu	Pro	Thr	Asn	Thr	Asp	Ile	Phe	Gly
		100				105					110				
Leu	Lys	Ile	Ser	Asn	Ser	Leu	Ile	Leu	Asp	Val	Lys	Ala	Glu	Pro	Ile
	115				120					125					
Asp	Asp	Gly	Lys	Gly	Leu	Asn	Leu	Ser	Phe	Pro	Val	Thr	Ala	Asn	Val
130				135					140						
Thr	Glu	Ala	Gly	Pro	Ile	Ile	Asp	Gln	Ile	Ile	Asn	Leu	Arg	Ala	Ser
145				150				155							160
Leu	Asp	Leu	Leu	Thr	Ala	Val	Thr	Ile	Glu	Thr	Asp	Pro	Gln	Thr	His
			165				170					175			
His	Pro	Val	Ala	Gly	Leu	Gly	Glu	Cys	Ala	Arg	Asp	Pro	Thr	Ser	Ile
		180				185					190				
Ser	Leu	Cys	Leu	Leu	Asp	Lys	His	Ser	Gln	Ile	Ile	Asn	Lys	Phe	Val
	195				200					205					
Asn	Ser	Val	Ile	Asn	Thr	Leu	Lys	Ser	Thr	Val	Ser	Ser	Leu	Leu	Gln
210				215					220						
Lys	Glu	Ile	Cys	Pro	Leu	Ile	Arg	Ile	Phe	Ile	His	Ser	Leu	Asp	Val
225				230				235							240
Asn	Val	Ile	Gln	Gln	Val	Val	Asp	Asn	Pro	Gln	His	Lys	Thr	Gln	Leu
			245					250					255		
Gln	Thr	Leu	Ile												
			260												

<210> 1261
<211> 278
<212>Amino acid
<213> Homo sapiens

<400> 1261

Cys	Ser	Leu	Arg	Arg	Pro	Arg	Ser	Ala	Ala	Glu	Pro	Asp	Ala	Asp	His
1				5					10					15	
Val	Pro	Leu	Leu	Gly	Leu	Leu	Arg	Leu	Gln	Leu	Arg	Ala	Ala	Arg	Gln
			20				25					30			
Pro	Gly	Ala	Met	Arg	Pro	Gln	Gly	Pro	Ala	Ala	Ser	Pro	Gln	Arg	Leu

```
          35                    40                    45
Arg Gly Leu Leu Leu Leu Leu Leu Leu Gln Leu Pro Ala Pro Ser Ser
          50                    55                    60
Ala Ser Glu Ile Pro Lys Gly Lys Gln Lys Ala Gln Leu Arg Gln Arg
65                    70                    75                    80
Glu Val Val Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala Gly
                  85                    90                    95
Val Pro Gly Arg Asp Gly Ser Pro Gly Ala Asn Gly Ile Pro Gly Thr
              100                   105                   110
Pro Gly Ile Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys Gly Glu Cys
          115                   120                   125
Leu Arg Glu Ser Phe Glu Glu Ser Trp Thr Pro Asn Tyr Lys Gln Cys
      130                   135                   140
Ser Trp Ser Ser Leu Asn Tyr Gly Ile Asp Leu Gly Lys Ile Ala Glu
145                   150                   155                   160
Cys Thr Phe Thr Lys Met Arg Ser Asn Ser Ala Leu Arg Val Leu Phe
              165                   170                   175
Ser Gly Ser Leu Arg Leu Lys Cys Arg Asn Ala Cys Cys Gln Arg Trp
              180                   185                   190
Tyr Phe Thr Phe Asn Gly Ala Glu Cys Ser Gly Pro Leu Pro Ile Glu
          195                   200                   205
Ala Ile Ile Tyr Leu Asp Gln Gly Ser Pro Glu Met Asn Ser Thr Ile
      210                   215                   220
Asn Ile His Arg Thr Ser Ser Val Glu Gly Leu Cys Glu Gly Ile Gly
225                   230                   235                   240
Ala Gly Leu Val Asp Val Ala Ile Trp Val Gly Thr Cys Ser Asp Tyr
              245                   250                   255
Pro Lys Gly Asp Ala Ser Thr Gly Trp Asn Ser Val Ser Arg Ile Ile
          260                   265                   270
Ile Glu Glu Leu Pro Lys
          275         278
```

```
      <210> 1262
      <211> 362
      <212>Amino acid
      <213> Homo sapiens
```

```
      <400> 1262
Met His Ser Ala Met Leu Gly Thr Arg Val Asn Leu Ser Val Ser Asp
1                 5                   10                    15
Phe Trp Arg Val Met Met Arg Val Cys Trp Leu Val Arg Gln Asp Ser
              20                    25                    30
Arg His Gln Arg Ile Arg Leu Pro His Leu Glu Ala Val Val Ile Gly
          35                    40                    45
Arg Gly Pro Glu Thr Lys Ile Thr Asp Lys Lys Cys Ser Arg Gln Gln
      50                    55                    60
Val Gln Leu Lys Ala Glu Cys Asn Lys Gly Tyr Val Lys Val Lys Gln
65                    70                    75                    80
Val Gly Val Asn Pro Thr Ser Ile Asp Ser Val Val Ile Gly Lys Asp
                  85                    90                    95
Gln Glu Val Lys Leu Gln Pro Gly Gln Val Leu His Met Val Asn Glu
              100                   105                   110
Leu Tyr Pro Tyr Ile Val Glu Phe Glu Glu Glu Ala Lys Asn Pro Gly
          115                   120                   125
Leu Glu Thr His Arg Lys Arg Lys Arg Ser Gly Asn Ser Asp Ser Ile
      130                   135                   140
Glu Arg Asp Ala Ala Gln Glu Ala Glu Ala Gly Thr Gly Leu Glu Pro
145                   150                   155                   160
Gly Ser Asn Ser Gly Gln Cys Ser Val Pro Leu Lys Lys Gly Lys Asp
```

```
                    165                    170                    175
Ala Pro Ile Lys Lys Glu Ser Leu Gly His Trp Ser Gln Gly Leu Lys
                180                    185                    190
Ile Ser Met Gln Asp Pro Lys Met Gln Val Tyr Lys Asp Glu Gln Val
                195                    200                    205
Val Val Ile Lys Asp Lys Tyr Pro Lys Ala Arg Tyr His Trp Leu Val
    210                    215                    220
Leu Pro Trp Thr Ser Ile Ser Ser Leu Lys Ala Val Ala Arg Glu His
225                    230                    235                    240
Leu Glu Leu Leu Lys His Met His Thr Val Gly Glu Lys Val Ile Val
                245                    250                    255
Asp Phe Ala Gly Ser Ser Lys Leu Arg Phe Arg Leu Gly Tyr His Ala
                260                    265                    270
Ile Pro Ser Met Ser His Val His Leu His Val Ile Ser Gln Asp Phe
                275                    280                    285
Asp Ser Pro Cys Leu Lys Asn Lys Lys His Trp Asn Ser Phe Asn Thr
    290                    295                    300
Glu Tyr Phe Leu Glu Ser Gln Ala Val Ile Glu Met Val Gln Glu Ala
305                    310                    315                    320
Gly Arg Val Thr Val Arg Asp Gly Met Pro Glu Leu Leu Lys Leu Pro
                325                    330                    335
Leu Arg Cys His Glu Cys Gln Gln Leu Leu Pro Ser Ile Pro Gln Leu
                340                    345                    350
Lys Glu His Leu Arg Lys His Trp Thr Gln
                355                    360    362
```

```
<210> 1263
<211> 618
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(618)
<223> X = any amino acid or stop code
```

```
    <400> 1263
Asp Met Ser Asp Thr Ser Glu Ser Gly Ala Gly Leu Thr Arg Phe Gln
1                    5                    10                    15
Ala Glu Ala Ser Glu Lys Asp Ser Ser Ser Met Met Gln Thr Leu Leu
                20                    25                    30
Thr Val Thr Gln Asn Val Glu Val Pro Glu Thr Pro Lys Ala Ser Lys
                35                    40                    45
Ala Leu Glu Val Ser Glu Asp Val Lys Val Ser Lys Ala Ser Gly Val
    50                    55                    60
Ser Lys Ala Thr Glu Val Ser Lys Thr Pro Glu Ala Arg Glu Ala Pro
65                    70                    75                    80
Ala Thr Gln Ala Ser Ser Thr Thr Gln Leu Thr Asp Thr Gln Val Leu
                85                    90                    95
Ala Ala Glu Asn Lys Ser Leu Ala Ala Asp Thr Lys Lys Gln Asn Ala
                100                    105                    110
Asp Pro Gln Ala Val Thr Met Pro Ala Thr Glu Thr Lys Lys Val Ser
    115                    120                    125
His Val Ala Asp Thr Lys Val Asn Thr Lys Ala Gln Glu Thr Glu Ala
    130                    135                    140
Ala Pro Ser Gln Ala Pro Ala Asp Glu Pro Glu Pro Glu Ser Ala Ala
145                    150                    155                    160
Ala Gln Ser Gln Glu Asn Gln Asp Thr Arg Pro Lys Val Lys Ala Lys
                165                    170                    175
```

```
Lys Ala Arg Lys Val Lys His Leu Asp Gly Glu Glu Asp Gly Ser Ser
        180                     185             190
Asp Gln Ser Gln Ala Ser Gly Thr Thr Gly Gly Arg Arg Val Ser Lys
        195                 200             205
Ala Leu Met Ala Ser Met Ala Arg Arg Ala Ser Arg Gly Pro Ile Ala
210                 215             220
Phe Trp Ala Arg Arg Ala Ser Arg Thr Arg Leu Ala Cys Phe Gly Pro
225             230             235                 240
Gly Glu Pro Leu Leu Ser Pro Trp Arg Ser Pro Lys Ala Arg Arg Gln
            245             250                 255
Arg Gly Phe Ala Val Arg Val Ala Lys Phe Gln Ser Ser Gln Glu Pro
            260             265             270
Glu Ala Pro Pro Pro Trp Asp Val Ala Leu Leu Gln Gly Arg Ala Asn
        275                 280             285
Asp Leu Val Lys Tyr Leu Leu Ala Lys Asp Gln Thr Lys Ile Pro Ile
        290             295             300
Lys Arg Ser Asp Met Leu Lys Asp Ile Ile Lys Glu Tyr Thr Asp Val
305             310             315                 320
Tyr Pro Glu Ile Ile Glu Arg Ala Gly Tyr Ser Leu Glu Lys Val Phe
            325             330             335
Gly Ile Gln Leu Lys Glu Ile Asp Lys Asn Asp His Leu Tyr Ile Leu
            340             345             350
Leu Ser Thr Leu Glu Pro Thr Asp Ala Gly Ile Leu Gly Thr Thr Lys
        355             360             365
Asp Ser Pro Lys Leu Gly Leu Leu Met Val Leu Leu Ser Ile Ile Phe
        370             375             380
Met Asn Gly Asn Arg Ser Ser Glu Ala Val Ile Trp Glu Val Leu Arg
385             390             395                 400
Arg Ser Leu Gly Leu Arg Leu Gly Ile His His Ser Leu Leu Gly Asp
            405             410                 415
Val Lys Lys Leu Ile Thr Asp Glu Val Val Lys Gln Lys Tyr Leu Asp
            420             425             430
Tyr Ala Arg Val Pro His Ser Asn Ser Pro Glu Tyr Glu Phe Phe Trp
        435             440             445
Gly Leu Arg Ser Tyr Tyr Glu Asp Gln Gln Arg Xaa Lys Ser Phe Lys
450             455             460
Phe Ala Cys Lys Val Gln Lys Lys Asp Pro Lys Glu Trp Ala Ala Gln
465             470             475                 480
Ser Pro Pro Gly Lys Ala Arg Glu Arg Met Glu Ala Asp Leu Lys Ala
            485             490             495
Ala Ser Xaa Gly Ser Pro Trp Lys Pro Arg Leu Arg Ala Glu Ile Lys
        500             505             510
Ala Arg Met Gly Ile Gly Leu Gly Ser Glu Asn Ala Ala Gly Pro Cys
    515             520             525
Asn Trp Asp Glu Ala Asp Ile Gly Pro Trp Ala Lys Ala Arg Ile Gln
    530             535             540
Ala Gly Ala Glu Ala Lys Ala Lys Ala Gln Glu Ser Gly Ser Ala Ser
545             550             555                 560
Thr Gly Ala Ser Thr Ser Thr Asn Asn Ser Ala Ser Ala Ser Ala Ser
            565             570             575
Thr Ser Gly Gly Phe Ser Ala Gly Ala Ser Leu Thr Ala Thr Leu Thr
        580             585             590
Phe Gly Leu Phe Ala Gly Leu Gly Gly Ala Gly Ala Ser Thr Ser Gly
        595             600             605
Ser Ser Gly Ala Cys Gly Phe Ser Tyr Lys
610             615             618
```

```
<210> 1264
<211> 464
<212> Amino acid
<213> Homo sapiens

<220>
```

```
        <221> misc_feature
        <222> (1)...(464)
        <223> X = any amino acid or stop code




        <400> 1264
Ala Arg Pro Pro Val Cys Thr Gly Ser Thr Met Ser Leu Thr Val Val
 1               5                   10                  15
Ser Met Ala Cys Val Gly Phe Phe Leu Leu Gln Gly Ala Trp Pro Leu
            20                  25                  30
Met Gly Gly Gln Asp Lys Pro Phe Leu Ser Ala Arg Pro Ser Thr Val
        35                  40                  45
Val Pro Arg Gly Gly His Val Ala Leu Gln Cys His Tyr Arg Arg Gly
    50                  55                  60
Phe Asn Asn Phe Met Leu Tyr Lys Glu Asp Arg Ser His Val Pro Ile
65                  70                  75                  80
Phe His Gly Arg Ile Phe Gln Glu Ser Phe Ile Met Gly Pro Val Thr
                85                  90                  95
Pro Ala His Ala Gly Thr Tyr Arg Cys Arg Gly Ser Arg Pro His Ser
            100                 105                 110
Leu Thr Gly Trp Ser Ala Pro Ser Asn Pro Leu Val Ile Met Val Thr
        115                 120                 125
Gly Asn His Arg Lys Pro Ser Leu Leu Ala His Pro Gly Pro Leu Leu
    130                 135                 140
Lys Ser Gly Glu Thr Val Ile Leu Gln Cys Trp Ser Asp Ile Met Phe
145                 150                 155                 160
Glu His Phe Phe Leu His Lys Glu Gly Ile Ser Lys Asp Pro Ser Arg
                165                 170                 175
Leu Val Gly Gln Ile His Asp Gly Val Ser Lys Ala Asn Phe Ser Ile
            180                 185                 190
Gly Pro Met Met Leu Ala Leu Ala Gly Thr Tyr Arg Cys Tyr Gly Ser
        195                 200                 205
Val Thr His Thr Pro Tyr Gln Leu Ser Ala Pro Ser Asp Pro Leu Asp
    210                 215                 220
Ile Val Val Thr Gly Pro Tyr Glu Lys Pro Ser Leu Ser Ala Gln Pro
225                 230                 235                 240
Gly Pro Lys Val Gln Ala Gly Glu Ser Val Thr Leu Ser Cys Ser Ser
            245                 250                 255
Arg Ser Ser Tyr Asp Met Tyr His Leu Ser Arg Glu Gly Gly Ala His
            260                 265                 270
Glu Arg Arg Leu Pro Ala Val Arg Lys Val Asn Arg Thr Phe Gln Ala
        275                 280                 285
Asp Phe Pro Leu Gly Pro Ala Thr His Gly Gly Thr Tyr Arg Cys Phe
    290                 295                 300
Gly Ser Phe Arg His Ser Pro Tyr Glu Trp Ser Asp Pro Ser Asp Pro
305                 310                 315                 320
Leu Leu Val Ser Val Thr Gly Asn Pro Ser Ser Ser Trp Pro Ser Pro
            325                 330                 335
Thr Glu Pro Ser Ser Lys Ser Gly Asn Leu Arg His Leu His Ile Leu
        340                 345                 350
Ile Gly Thr Ser Val Val Lys Ile Pro Phe Thr Ile Leu Leu Phe Phe
        355                 360                 365
Leu Leu His Arg Trp Cys Ser Asn Lys Lys Asn Ala Ala Val Met Asp
    370                 375                 380
Gln Glu Pro Ala Gly Asn Arg Val Asn Ser Glu Asp Ser Asp Glu Gln
385                 390                 395                 400
Asp His Gln Glu Val Ser Tyr Pro Xaa Leu Glu His Cys Val Phe Thr
                405                 410                 415
Gln Arg Lys Ile Thr Arg Pro Ser Gln Arg Pro Lys Thr Pro Pro Thr
        420                 425                 430
Asp Thr Ser Met Tyr Ile Glu Leu Pro Asn Ala Glu Pro Arg Ser Lys
```

```
              435               440               445
Val Val Phe Cys Pro Arg Ala Pro Gln Ser Gly Leu Glu Gly Ile Phe
    450               455               460           464
```

```
    <210> 1265
    <211> 1879
    <212> Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(1879)
    <223> X = any amino acid or stop code



    <400> 1265
Leu His Asn Leu Arg Glu Arg Tyr Phe Ser Gly Leu Ile Tyr Thr Tyr
  1           .   5               10                  15
Ser Gly Leu Phe Cys Val Val Val Asn Pro Tyr Lys His Leu Pro Ile
            20              25              30
Tyr Ser Glu Lys Ile Val Asp Met Tyr Lys Gly Lys Lys Arg His Glu
        35              40              45
Met Pro Pro His Ile Tyr Ala Ile Ala Asp Thr Ala Tyr Arg Ser Met
    50              55              60
Leu Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys Thr Gly Glu Ser Gly
 65              70              75              80
Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile Gln Tyr Leu Ala Val
            85              90              95
Val Ala Ser Ser His Lys Gly Lys Lys Asp Thr Ser Ile Thr Gly Glu
        100             105             110
Leu Glu Lys Gln Leu Leu Gln Ala Asn Pro Ile Leu Glu Ala Phe Gly
        115             120             125
Asn Ala Lys Thr Val Lys Asn Asp Asn Ser Ser Arg Phe Gly Lys Phe
    130             135             140
Ile Arg Ile Asn Phe Asp Val Thr Gly Tyr Ile Val Gly Ala Asn Ile
145             150             155             160
Glu Thr Tyr Leu Leu Glu Lys Ser Arg Ala Ile Arg Gln Ala Arg Asp
            165             170             175
Glu Arg Thr Phe His Ile Phe Tyr Tyr Met Ile Ala Gly Ala Lys Glu
            180             185             190
Lys Met Arg Ser Asp Leu Leu Leu Glu Gly Phe Asn Asn Tyr Thr Phe
    195             200             205
Leu Ser Asn Gly Phe Val Pro Ile Pro Ala Ala Gln Asp Asp Glu Met
    210             215             220
Phe Gln Glu Thr Val Glu Ala Met Ala Ile Met Gly Phe Ser Glu Glu
225             230             235             240
Glu Gln Leu Ser Ile Leu Lys Val Val Ser Ser Val Leu Gln Leu Gly
            245             250             255
Asn Ile Val Phe Lys Lys Glu Arg Asn Thr Asp Gln Ala Ser Met Pro
            260             265             270
Asp Asn Thr Ala Ala Gln Lys Val Cys His Leu Met Gly Ile Asn Val
    275             280             285
Thr Asp Phe Thr Arg Ser Ile Leu Thr Pro Arg Ile Lys Val Gly Arg
    290             295             300
Asp Val Val Gln Lys Ala Gln Thr Lys Glu Gln Ala Asp Phe Ala Val
305             310             315             320
Glu Ala Leu Ala Lys Ala Thr Tyr Glu Arg Leu Phe Arg Trp Ile Leu
            325             330             335
```

Thr Arg Val Asn Lys Ala Leu Asp Lys Thr His Arg Gln Gly Ala Ser
              340   345   350
Phe Leu Gly Ile Leu Asp Ile Ala Gly Phe Glu Ile Phe Glu Val Asn
          355   360   365
Ser Phe Glu Gln Leu Cys Ile Asn Tyr Thr Asn Glu Lys Leu Gln Gln
    370   375   380
Leu Phe Asn His Thr Met Phe Ile Leu Glu Gln Glu Glu Tyr Gln Arg
385   390   395   400
Glu Gly Ile Glu Trp Asn Phe Ile Asp Phe Gly Leu Asp Leu Gln Pro
              405   410   415
Cys Ile Glu Leu Ile Glu Arg Pro Asn Asn Pro Pro Gly Val Leu Ala
          420   425   430
Leu Leu Asp Glu Glu Cys Trp Phe Pro Lys Ala Thr Asp Lys Ser Phe
          435   440   445
Val Glu Lys Leu Cys Thr Glu Gln Gly Ser His Pro Lys Phe Gln Lys
    450   455   460
Pro Lys Gln Leu Lys Asp Lys Thr Glu Phe Ser Ile Ile His Tyr Ala
465   470   475   480
Gly Lys Val Asp Tyr Asn Ala Ser Ala Trp Leu Thr Lys Asn Met Asp
              485   490   495
Pro Leu Asn Asp Asn Val Thr Ser Leu Leu Asn Ala Ser Ser Asp Lys
          500   505   510
Phe Val Ala Asp Leu Trp Lys Asp Val Asp Arg Ile Val Gly Leu Asp
          515   520   525
Gln Met Ala Lys Met Thr Glu Ser Ser Leu Pro Ser Ala Ser Lys Thr
    530   535   540
Lys Lys Gly Met Phe Arg Thr Val Gly Gln Leu Tyr Lys Glu Gln Leu
545   550   555   560
Gly Lys Leu Met Thr Thr Leu Arg Asn Thr Thr Pro Asn Phe Val Arg
              565   570   575
Cys Ile Ile Pro Asn His Glu Lys Arg Ser Gly Lys Leu Asp Ala Phe
              580   585   590
Leu Val Leu Glu Gln Leu Arg Cys Asn Gly Val Leu Glu Gly Ile Arg
    595   600   605
Ile Cys Arg Gln Gly Phe Pro Asn Arg Ile Val Phe Gln Glu Phe Arg
    610   615   620
Gln Arg Tyr Glu Ile Leu Ala Ala Asn Ala Ile Pro Lys Gly Phe Met
625   630   635   640
Asp Gly Lys Gln Ala Cys Ile Leu Met Ile Lys Ala Leu Glu Leu Asp
              645   650   655
Pro Asn Leu Tyr Arg Ile Gly Gln Ser Lys Ile Phe Phe Arg Thr Gly
              660   665   670
Val Leu Ala His Leu Glu Glu Glu Arg Asp Leu Lys Ile Thr Asp Val
    675   680   685
Ile Met Ala Phe Gln Ala Met Cys Arg Gly Tyr Leu Ala Arg Lys Ala
    690   695   700
Phe Ala Lys Arg Gln Gln Gln Leu Thr Ala Met Lys Val Ile Gln Arg
705   710   715   720
Asn Cys Ala Ala Tyr Ile Lys Leu Arg Asn Trp Gln Trp Cys Arg Leu
              725   730   735
Phe Thr Lys Val Xaa Pro Leu Leu Gln Val Thr Arg Gln Glu Xaa Glu
              740   745   750
Met Gln Ala Lys Glu Asp Glu Leu Gln Lys Thr Lys Glu Arg Gln Gln
    755   760   765
Lys Ala Glu Asn Glu Leu Lys Glu Leu Glu Gln Lys His Ser Gln Leu
    770   775   780
Thr Glu Glu Lys Asn Leu Leu Gln Glu Gln Leu Gln Ala Glu Thr Glu
785   790   795   800
Leu Tyr Ala Glu Ala Glu Glu Met Arg Val Arg Leu Ala Ala Lys Lys
              805   810   815
Gln Glu Leu Glu Glu Ile Leu His Glu Met Glu Ala Arg Leu Glu Glu
          820   825   830
Glu Glu Asp Arg Gly Gln Gln Leu Gln Ala Glu Arg Lys Lys Met Ala
    835   840   845

772

Gln Gln Met Leu Asp Leu Glu Glu Gln Leu Glu Glu Glu Ala Ala
        850   855   860
Arg Gln Lys Leu Gln Leu Glu Lys Val Thr Ala Glu Ala Lys Ile Lys
865   870   875   880
Lys Leu Glu Asp Glu Ile Leu Val Met Asp Asp Gln Asn Asn Lys Leu
                885   890   895
Ser Lys Glu Arg Lys Leu Leu Glu Glu Arg Ile Ser Asp Leu Thr Thr
        900   905   910
Asn Leu Ala Glu Glu Glu Lys Ala Lys Asn Leu Thr Lys Leu Lys
        915   920   925
Asn Lys His Glu Ser Met Ile Ser Glu Leu Glu Val Arg Leu Lys Lys
        930   935   940
Glu Glu Lys Ser Arg Gln Glu Leu Glu Lys Leu Lys Arg Lys Leu Glu
945   950   955   960
Gly Asp Ala Ser Asp Phe His Glu Gln Ile Ala Asp Leu Gln Ala Gln
                965   970   975
Ile Ala Glu Leu Lys Met Gln Leu Ala Lys Lys Glu Glu Glu Leu Gln
        980   985   990
Ala Ala Leu Ala Arg Leu Asp Asp Glu Ile Ala Gln Lys Asn Asn Ala
        995   1000   1005
Leu Lys Lys Ile Arg Glu Leu Glu Gly His Ile Ser Asp Leu Gln Glu
    1010   1015   1020
Asp Leu Asp Ser Glu Arg Ala Ala Arg Asn Lys Ala Glu Lys Gln Lys
1025   1030   1035   1040
Arg Asp Leu Gly Glu Glu Leu Glu Ala Leu Lys Thr Glu Leu Glu Asp
            1045   1050   1055
Thr Leu Asp Ser Thr Ala Thr Gln Gln Glu Leu Arg Ala Lys Arg Glu
        1060   1065   1070
Gln Glu Val Thr Val Leu Lys Arg Ala Leu Asn Glu Glu Thr Arg Ser
    1075   1080   1085
His Glu Ala Gln Val Gln Glu Met Arg Gln Lys His Ala Gln Ala Val
    1090   1095   1100
Gln Ser Leu Thr Glu Gln Leu Glu Gln Xaa Lys Arg Ala Lys Ala Asn
1105   1110   1115   1120
Leu Asp Lys Asn Lys Gln Thr Leu Glu Lys Glu Asn Thr Asp Leu Ala
            1125   1130   1135
Gly Glu Leu Arg Val Leu Gly Gln Ala Lys Gln Glu Val Glu His Arg
        1140   1145   1150
Met Lys Lys Leu Gln Ala Gln Val Gln Glu Leu Gln Ser Lys Cys Ser
    1155   1160   1165
Asp Gly Glu Arg Ala Arg Ala Glu Leu Asn Asp Lys Val His Lys Leu
    1170   1175   1180
Gln Asn Glu Val Glu Ser Val Thr Gly Met Leu Asn Glu Ala Glu Gly
1185   1190   1195   1200
Lys Ala Ile Lys Leu Ala Lys Asp Val Ala Ser Leu Ser Ser Gln Leu
            1205   1210   1215
Gln Asp Thr Gln Glu Leu Leu Gln Glu Glu Ser Arg Gln Lys Leu Asn
        1220   1225   1230
Val Ser Thr Ser Leu Arg Gln Leu Glu Glu Glu Arg Asn Ser Leu Gln
        1235   1240   1245
Asp Gln Leu Asp Glu Glu Met Glu Ala Lys Gln Asn Leu Glu Arg His
    1250   1255   1260
Ile Ser Thr Leu Asn Ile Gln Leu Ser Asp Ser Lys Lys Lys Leu Gln
1265   1270   1275   1280
Asp Phe Ala Ser Thr Val Glu Ala Leu Glu Glu Gly Lys Lys Arg Phe
        1285   1290   1295
Gln Lys Glu Ile Glu Asn Leu Thr Gln Gln Tyr Glu Glu Lys Ala Ala
        1300   1305   1310
Ala Tyr Asp Lys Leu Glu Lys Thr Lys Asn Arg Leu Gln Gln Glu Leu
    1315   1320   1325
Asp Asp Leu Val Val Asp Leu Asp Asn Gln Arg Gln Leu Val Ser Asn
    1330   1335   1340
Leu Glu Lys Lys Gln Arg Lys Phe Asp Gln Leu Leu Ala Glu Glu Lys
1345   1350   1355   1360

773

Asn Ile Ser Ser Lys Tyr Ala Asp Glu Arg Asp Arg Val Glu Ala Glu
          1365   1370   1375
Ala Arg Glu Lys Glu Thr Lys Ala Leu Ser Leu Ala Arg Ala Leu Glu
          1380   1385   1390
Glu Ala Leu Glu Ala Lys Glu Glu Leu Glu Arg Thr Asn Lys Met Leu
          1395   1400   1405
Lys Ala Glu Met Gly Arg Pro Gly Ser Ala Ser Lys Asp Asp Val Gly
        1410   1415   1420
Gln Glu Leu Ser His Asp Leu Glu Lys Ser Lys Arg Ala Leu Gly Asp
      1425   1430   1435   1440
Pro Arg Leu Glu Glu Met Lys Thr Gln Leu Glu Glu Leu Gly Arg Thr
          1445   1450   1455
Glu Leu Ala Ser Pro Arg Arg Asp Ala Lys Leu Arg Leu Glu Val Asn
          1460   1465   1470
Met Gln Ala Pro Ser Arg Ala Ser Phe Glu Arg Asp Leu Gln Ala Arg
          1475   1480   1485
Thr Glu Gln Asn Glu Glu Ser Arg Arg His Leu Gln Arg Gln Leu His
          1490   1495   1500
Glu Tyr Glu Thr Glu Leu Glu Asp Glu Arg Lys Gln Arg Ala Leu Ala
      1505   1510   1515   1520
Ala Ala Ala Lys Ile Lys Leu Gly Trp Asp Pro Val Arg Thr Leu Asp
          1525   1530   1535
Leu Xaa Ala Asp Ser Ala Ile Lys Gly Arg Gly Gly Lys Ala Ile Lys
          1540   1545   1550
Gln Leu Arg Lys Leu Gln Ala Gln Met Lys Asp Phe Gln Arg Glu Leu
        1555   1560   1565
Glu Asp Ala Arg Ala Ser Arg Asp Glu Ile Phe Ala Thr Ala Lys Glu
      1570   1575   1580
Asn Glu Lys Lys Ala Lys Ser Leu Glu Ala Asp Leu Met Gln Leu Gln
    1585   1590   1595   1600
Glu Asp Leu Ala Ala Ala Glu Glu Gly Arg Lys Gln Ala Asp Leu Glu
          1605   1610   1615
Lys Glu Glu Leu Ala Glu Glu Leu Ala Ser Ser Leu Ser Gly Arg Asn
          1620   1625   1630
Ala Leu Gln Asp Glu Lys Arg Arg Leu Glu Ala Arg Ile Ala Gln Leu
        1635   1640   1645
Glu Glu Glu Leu Glu Glu Glu Gln Gly Asn Met Glu Ala Met Ser Asp
      1650   1655   1660
Arg Val Arg Lys Ala Thr Gln Gln Ala Glu Gln Leu Ser Asn Glu Leu
    1665   1670   1675   1680
Ala Thr Glu Arg Ser Thr Ala Gln Lys Asn Glu Ser Ala Arg Gln Gln
          1685   1690   1695
Leu Glu Arg Gln Asn Lys Glu Leu Arg Ser Lys Leu His Glu Met Glu
          1700   1705   1710
Gly Ala Val Lys Ser Lys Phe Lys Ser Thr Ile Ala Ala Leu Glu Ala
      1715   1720   1725
Lys Ile Ala Gln Leu Glu Glu Gln Val Glu Gln Glu Ala Arg Glu Lys
      1730   1735   1740
Gln Ala Ala Thr Lys Ser Leu Lys Gln Lys Asp Lys Lys Leu Lys Glu
    1745   1750   1755   1760
Ile Leu Leu Gln Val Glu Asp Glu Arg Lys Met Ala Glu Gln Tyr Lys
          1765   1770   1775
Glu Gln Ala Glu Lys Gly Asn Ala Arg Val Lys Gln Leu Lys Arg Gln
          1780   1785   1790
Leu Glu Glu Ala Glu Glu Glu Ser Gln Arg Ile Asn Ala Asn Arg Arg
        1795   1800   1805
Lys Leu Gln Arg Glu Leu Asp Glu Ala Thr Glu Ser Asn Glu Ala Met
      1810   1815   1820
Gly Arg Glu Val Asn Ala Leu Lys Ser Lys Leu Arg Arg Gly Asn Glu
    1825   1830   1835   1840
Thr Ser Phe Val Pro Ser Arg Arg Ser Gly Gly Arg Arg Val Ile Glu
          1845   1850   1855
Asn Ala Asp Gly Ser Glu Glu Glu Thr Asp Thr Arg Asp Ala Asp Phe
        1860   1865   1870

Asn Gly Thr Lys Ala Ser Glu
    1875   1879

        <210> 1266
        <211> 257
        <212>Amino acid
        <213> Homo sapiens

        <400> 1266
Lys Leu His Phe Ala Lys Ser Leu Asn Ser Glu Leu Ser Cys Ser Thr
 1   5   10   15
Arg Glu Ala Met Gln Asp Glu Asp Gly Tyr Ile Thr Leu Asn Ile Lys
            20   25   30
Thr Arg Lys Pro Ala Leu Val Ser Val Gly Pro Ala Ser Ser Ser Trp
        35   40   45
Trp Arg Val Met Ala Leu Ile Leu Leu Ile Leu Cys Val Gly Met Val
    50   55   60
Val Gly Leu Val Ala Leu Gly Ile Trp Ser Val Met Gln Arg Asn Tyr
65   70   75   80
Leu Gln Asp Glu Asn Glu Asn Arg Thr Gly Thr Leu Gln Gln Leu Ala
            85   90   95
Lys Arg Phe Cys Gln Tyr Val Val Lys Gln Ser Glu Leu Lys Gly Thr
        100   105   110
Phe Lys Gly His Lys Cys Ser Pro Cys Asp Thr Asn Trp Arg Tyr Tyr
    115   120   125
Gly Asp Ser Cys Tyr Gly Phe Phe Arg His Asn Leu Thr Trp Glu Glu
    130   135   140
Ser Lys Gln Tyr Cys Thr Asp Met Asn Ala Thr Leu Leu Lys Ile Asp
145   150   155   160
Asn Arg Asn Ile Val Glu Tyr Ile Lys Ala Arg Thr His Leu Ile Arg
            165   170   175
Trp Val Gly Leu Ser Arg Gln Lys Ser Asn Glu Val Trp Lys Trp Glu
        180   185   190
Asp Gly Ser Val Ile Ser Glu Asn Met Phe Glu Phe Leu Glu Asp Gly
    195   200   205
Lys Gly Asn Met Asn Cys Ala Tyr Phe His Asn Gly Lys Met His Pro
    210   215   220
Thr Phe Cys Glu Asn Lys His Tyr Leu Met Cys Glu Arg Lys Ala Gly
225   230   235   240
His Asp Pro Arg Trp Thr Gln Leu Pro Leu Met Pro Lys Arg Trp Thr
            245   250   255
Gly
257

        <210> 1267
        <211> 208
        <212>Amino acid
        <213> Homo sapiens

        <400> 1267
Asn Gln Gly Leu Arg Asp Val Gly Leu Cys Arg Thr Cys Leu Val Asn
 1   5   10   15
Lys Ile Phe Ala Ser Ser Ile Leu Gly Lys Ser His His His Ser Leu
        20   25   30

775

```
Val Ser Ile Asn Gln Gly His Asn Ala Pro Trp Lys Ala Ala Gly Ser
        35                      40                  45
Leu Pro Leu Lys Ala Ala Tyr Cys Gln Gly Phe Ser Pro Cys Asp Cys
    50                      55                  60
Leu Lys Tyr Gly Ser Trp Asp Glu Lys Asp Leu Met Val Pro Gln Pro
65                      70                  75                  80
Asp Thr His Lys Gly Ser Val Leu Arg Trp Ile Ser Lys Arg Gly Lys
                85                      90                  95
Pro Leu Ala Val Glu Met Glu Glu Gly His Cys Leu Cys Leu Pro Leu
            100                 105                 110
Gly Thr Glu Cys Leu Gly Val Lys Pro Ile Val His Leu Phe Asn Ser
        115                 120                 125
Glu Met Gly Glu Lys Arg Pro Val Ala Gly Ala Arg His Val Gly Ser
    130                 135                 140
Ser Ala Ala Leu Leu Phe Phe Thr Pro Leu Arg Cys Leu Gly Gly Glu
145                 150                 155                 160
Lys His Lys Ser Gly Leu Arg Ala Arg Pro Gly Ile Val Pro Ser Leu
                165                 170                 175
Glu Leu Asn Tyr Asp Ile Asp Ser Phe Ala His Met Phe Phe Ser Val
            180                 185                 190
Asp Leu Leu Leu Ile Ile Thr Leu Leu Ser Tyr Tyr Ile Pro Phe Cys
        195                 200                 205         208
```

```
<210> 1268
<211> 158
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1268
Met Trp Trp Arg Leu Ala Pro Thr Gln Ala Ile Trp Arg Ala Ala Gly
1               5                   10                  15
Cys Cys Met Arg Phe Ser Arg Arg Arg Ser Thr Cys Cys Cys Leu Ala
        20                      25                  30
Ser Cys Ile Phe Leu Leu Tyr Lys Ile Val Arg Gly Asp Gln Pro Ala
        35                      40                  45
Ala Lys Arg Arg Gln Arg Arg Arg Ala Ala Pro Ser Ala Pro Pro
    50                      55                  60
Gln Ala Ala Arg Leu His Pro Pro Pro Lys Leu Arg Arg Phe Asp Gly
65                  70                      75                  80
Val Gln Asp Pro Ala Pro Tyr Ser Trp Ala Ile Asn Gly Lys Val Phe
                85                      90                  95
Asp Val Thr Gln Arg Pro Ala Asn Phe Leu Arg Gly Pro Arg Gly Pro
            100                 105                 110
Glu Thr Leu Ser Asp Trp Glu Ser Gln Phe Thr Phe Lys Tyr His His
        115                 120                 125
Val Gly Lys Leu Leu Lys Glu Gly Glu Glu Pro Thr Val Tyr Ser Asp
    130                 135                 140
Glu Glu Glu Pro Lys Asp Glu Ser Ala Arg Lys Asn Asp *
145                 150                     155     157
```

```
<210> 1269
<211> 178
<212>Amino acid
<213> Homo sapiens
```

<400> 1269

Gly Pro Arg Met Ala Lys Phe Leu Ser Gln Asp Gln Ile Asn Glu Tyr
1   5   10   15
Lys Glu Cys Phe Ser Leu Tyr Asp Lys Gln Gln Arg Gly Lys Ile Lys
            20   25   30
Ala Thr Asp Leu Met Val Ala Met Arg Cys Leu Gly Ala Ser Pro Thr
        35   40   45
Pro Gly Glu Val Gln Arg His Leu Gln Thr His Gly Ile Asp Gly Asn
    50   55   60
Gly Glu Leu Asp Phe Ser Thr Phe Leu Thr Ile Met His Met Gln Ile
65   70   75   80
Lys Gln Glu Asp Pro Lys Lys Glu Ile Leu Leu Ala Met Leu Met Val
                85   90   95
Asp Lys Glu Lys Lys Gly Tyr Val Met Ala Ser Asp Leu Arg Ser Lys
            100   105   110
Leu Thr Ser Leu Gly Glu Lys Leu Thr His Lys Glu Val Asp Asp Leu
        115   120   125
Phe Arg Glu Ala Asp Ile Glu Pro Asn Gly Lys Val Lys Tyr Asp Glu
    130   135   140
Phe Ile His Lys Ile Thr Leu Leu Pro Gly Arg Asp Leu Leu Lys Glu
145   150   155   160
Glu Asn Gly Arg Ala Ser Pro Gly Pro Glu Asn Leu Glu Gln Leu Ile
                165   170   175
Phe Leu
178

<210> 1270
<211> 457
<212>Amino acid
<213> Homo sapiens

<400> 1270

Ala Asp Pro His Thr Thr Val Ile Arg Phe Phe Pro Ala Ala Ser Ala
1   5   10   15
Thr Lys Arg Val Leu Pro Pro Val Leu Arg Val Ser Ser Pro Arg Thr
            20   25   30
Trp Asn Pro Asn Val Pro Glu Ser Pro Arg Ile Pro Ala Pro Arg Leu
        35   40   45
Pro Lys Arg Met Ser Gly Ala Pro Thr Ala Gly Ala Ala Leu Met Leu
    50   55   60
Cys Ala Ala Thr Ala Val Leu Leu Ser Ala Gln Gly Gly Pro Val Gln
65   70   75   80
Ser Lys Ser Pro Arg Phe Ala Ser Trp Asp Glu Met Asn Val Leu Ala
                85   90   95
His Gly Leu Leu Gln Leu Gly Gln Gly Leu Arg Glu His Ala Glu Arg
            100   105   110
Thr Arg Ser Gln Leu Ser Ala Leu Glu Arg Arg Leu Ser Ala Cys Gly
        115   120   125
Ser Ala Cys Gln Gly Thr Glu Gly Ser Thr Asp Leu Pro Leu Ala Pro
    130   135   140
Glu Ser Arg Val Asp Pro Glu Val Leu His Ser Leu Gln Thr Gln Leu
145   150   155   160
Lys Ala Gln Asn Ser Arg Ile Gln Gln Leu Phe His Lys Val Ala Gln
                165   170   175
Gln Gln Arg His Leu Glu Lys Gln His Leu Arg Ile Gln His Leu Gln
            180   185   190

```
Ser Gln Phe Gly Leu Leu Asp His Lys His Leu Asp His Glu Val Ala
        195                 200                 205
Lys Pro Ala Arg Arg Lys Arg Leu Pro Glu Met Ala Gln Pro Val Asp
    210                 215                 220
Pro Ala His Asn Val Ser Arg Leu His Arg Leu Pro Arg Asp Cys Gln
225                 230                 235                 240
Glu Leu Phe Gln Val Gly Glu Arg Gln Ser Gly Leu Phe Glu Ile Gln
            245                 250                 255
Pro Gln Gly Ser Pro Pro Phe Leu Val Asn Cys Lys Met Thr Ser Asp
            260                 265                 270
Gly Gly Trp Thr Val Ile Gln Arg Arg His Asp Gly Ser Val Asp Phe
        275                 280                 285
Asn Arg Pro Trp Glu Ala Tyr Lys Ala Gly Phe Gly Asp Pro His Gly
    290                 295                 300
Glu Phe Trp Leu Gly Leu Glu Lys Val His Ser Ile Thr Gly Asp Arg
305                 310                 315                 320
Asn Ser Arg Leu Ala Val Gln Leu Arg Asp Trp Asp Gly Asn Ala Glu
            325                 330                 335
Leu Leu Gln Phe Ser Val His Leu Gly Gly Glu Asp Thr Ala Tyr Ser
            340                 345                 350
Leu Gln Leu Thr Ala Pro Val Ala Gly Gln Leu Gly Ala Thr Thr Val
        355                 360                 365
Pro Pro Ser Gly Leu Ser Val Pro Phe Ser Thr Trp Asp Gln Asp His
    370                 375                 380
Asp Leu Arg Arg Asp Lys Asn Cys Ala Lys Ser Leu Ser Gly Gly Trp
385                 390                 395                 400
Trp Phe Gly Thr Cys Ser His Ser Asn Leu Asn Gly Gln Tyr Phe Arg
            405                 410                 415
Ser Ile Pro Gln Gln Arg Gln Lys Leu Lys Lys Gly Ile Phe Trp Lys
            420                 425                 430
Thr Trp Arg Gly Arg Tyr Tyr Pro Leu Gln Ala Thr Thr Met Leu Ile
        435                 440                 445
Gln Pro Met Ala Ala Glu Ala Ala Ser
450                 455     457
```

<210> 1271
<211> 394
<212> Amino acid
<213> Homo sapiens

<400> 1271

```
Ala Leu Asp Phe Gly Asp Ser Cys Gln Trp Pro Arg Pro Gln Asp Thr
1               5                   10                  15
Met Lys Gln Leu Pro Val Leu Glu Pro Gly Asp Lys Pro Arg Lys Ala
            20                  25                  30
Thr Trp Tyr Thr Leu Thr Val Pro Gly Asp Ser Pro Cys Ala Arg Val
        35                  40                  45
Gly His Ser Cys Ser Tyr Leu Pro Pro Val Gly Asn Ala Lys Arg Gly
    50                  55                  60
Lys Val Phe Ile Val Gly Gly Ala Asn Pro Asn Arg Ser Phe Ser Asp
65                  70                  75                  80
Val His Thr Met Asp Leu Gly Lys His Gln Trp Asp Leu Asp Thr Cys
            85                  90                  95
Lys Gly Leu Leu Pro Arg Tyr Glu His Ala Ser Phe Ile Pro Ser Cys
            100                 105                 110
Thr Pro Asp Arg Ile Trp Val Phe Gly Gly Ala Asn Gln Ser Gly Asn
    115                 120                 125
Arg Asn Cys Leu Gln Val Leu Asn Pro Glu Thr Arg Thr Trp Thr Thr
    130                 135                 140
```

```
Pro Glu Val Thr Ser Pro Pro Pro Ser Pro Arg Thr Phe His Thr Ser
145                 150                 155                 160
Ser Ala Ala Ile Gly Asn Gln Leu Tyr Val Phe Gly Gly Gly Glu Arg
                165                 170                 175
Gly Ala Gln Pro Val Gln Asp Thr Lys Leu His Val Phe Asp Ala Asn
                180                 185                 190
Thr Leu Thr Trp Ser Gln Pro Glu Thr Leu Gly Asn Pro Pro Ser Pro
            195                 200                 205
Arg His Gly His Val Met Val Ala Ala Gly Thr Lys Leu Phe Ile His
    210                 215                 220
Gly Gly Leu Ala Gly Asp Arg Phe Tyr Asp Asp Leu His Cys Ile Asp
225                 230                 235                 240
Ile Ser Asp Met Lys Trp Gln Lys Leu Asn Pro Thr Gly Ala Ala Pro
                245                 250                 255
Ala Gly Cys Ala Ser His Thr Pro Ala Val Ala Met Gly Lys His Val
                260                 265                 270
Tyr Ile Phe Gly Gly Met Thr Pro Ala Gly Ala Pro Gly Thr Gln Cys
                275                 280                 285
Thr Gln Tyr His Thr Glu Glu Gln His Trp Asp Pro Cys Leu Lys Phe
    290                 295                 300
Asp Thr Pro Ser Tyr Pro Pro Gly Thr Ile Gly Thr His Ser His Val
305                 310                 315                 320
Val Ser Phe Pro Trp Pro Val Thr Cys Ala Ser Glu Lys Glu Asp Ser
                325                 330                 335
Asn Ser Leu Thr Leu Asn His Glu Ala Glu Lys Glu Asp Ser Ala Asp
                340                 345                 350
Lys Val Met Ser His Ser Gly Asp Ser His Glu Glu Ser Gln Thr Ala
                355                 360                 365
Thr Leu Leu Cys Leu Val Phe Gly Gly Met Asn Thr Glu Gly Glu Ile
    370                 375                 380
Tyr Asp Asp Cys Ile Val Thr Val Val Asp
385                 390                 394
```

```
    <210> 1272
    <211> 176
    <212>Amino acid
    <213> Homo sapiens


    <400> 1272
Gly Phe Ser Ile Gly Lys Ala Thr Asp Arg Met Asp Ala Phe Arg Lys
1                 5                 10                  15
Ala Lys Asn Arg Ala Val His His Leu His Tyr Ile Glu Arg Tyr Glu
                20                  25                  30
Asp His Thr Ile Phe His Asp Ile Ser Leu Arg Phe Lys Arg Thr His
            35                  40                  45
Ile Lys Met Lys Lys Gln Pro Lys Gly Tyr Gly Leu Arg Cys His Arg
    50                  55                  60
Ala Ile Ile Thr Ile Cys Arg Leu Ile Gly Ile Lys Asp Met Tyr Ala
65                  70                  75                  80
Lys Val Ser Gly Ser Ile Asn Met Leu Ser Leu Thr Gln Gly Leu Phe
                85                  90                  95
Arg Gly Leu Ser Arg Gln Glu Thr His Gln Gln Leu Ala Asp Lys Lys
        100                 105                 110
Gly Leu His Val Val Glu Ile Arg Glu Glu Cys Gly Pro Leu Pro Ile
    115                 120                 125
Val Val Ala Ser Pro Arg Gly Pro Leu Arg Lys Asp Pro Glu Pro Glu
    130                 135                 140
Asp Glu Val Pro Asp Val Lys Leu Asp Trp Glu Asp Val Lys Thr Ala
145                 150                 155                 160
```

```
Gln Gly Met Lys Arg Ser Val Trp Ser Asn Leu Lys Arg Ala Ala Thr
             165                 170                175 176
```

```
<210> 1273
<211> 457
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1273
Ala Asp Pro His Thr Thr Val Ile Arg Phe Phe Pro Ala Ala Ser Ala
 1               5                10                 15
Thr Lys Arg Val Leu Pro Pro Val Leu Arg Val Ser Ser Pro Arg Thr
         20              25                 30
Trp Asn Pro Asn Val Pro Glu Ser Pro Arg Ile Pro Ala Pro Arg Leu
     35              40              45
Pro Lys Arg Met Ser Gly Ala Pro Thr Ala Gly Ala Ala Leu Met Leu
     50              55              60
Cys Ala Ala Thr Ala Val Leu Leu Ser Ala Gln Gly Gly Pro Val Gln
 65              70              75                 80
Ser Lys Ser Pro Arg Phe Ala Ser Trp Asp Glu Met Asn Val Leu Ala
             85              90                 95
His Gly Leu Leu Gln Leu Gly Gln Gly Leu Arg Glu His Ala Glu Arg
         100             105                110
Thr Arg Ser Gln Leu Ser Ala Leu Glu Arg Arg Leu Ser Ala Cys Gly
     115             120                125
Ser Ala Cys Gln Gly Thr Glu Gly Ser Thr Asp Leu Pro Leu Ala Pro
 130             135                140
Glu Ser Arg Val Asp Pro Glu Val Leu His Ser Leu Gln Thr Gln Leu
145             150                155                160
Lys Ala Gln Asn Ser Arg Ile Gln Gln Leu Phe His Lys Val Ala Gln
             165                170                175
Gln Gln Arg His Leu Glu Lys Gln His Leu Arg Ile Gln His Leu Gln
         180                185                190
Ser Gln Phe Gly Leu Leu Asp His Lys His Leu Asp His Glu Val Ala
     195             200                205
Lys Pro Ala Arg Arg Lys Arg Leu Pro Glu Met Ala Gln Pro Val Asp
     210             215                220
Pro Ala His Asn Val Ser Arg Leu His Arg Leu Pro Arg Asp Cys Gln
225             230                235                240
Glu Leu Phe Gln Val Gly Glu Arg Gln Ser Gly Leu Phe Glu Ile Gln
             245                250                255
Pro Gln Gly Ser Pro Pro Phe Leu Val Asn Cys Lys Met Thr Ser Asp
             260                265                270
Gly Gly Trp Thr Val Ile Gln Arg Arg His Asp Gly Ser Val Asp Phe
         275             280                285
Asn Arg Pro Trp Glu Ala Tyr Lys Ala Gly Phe Gly Asp Pro His Gly
     290             295                300
Glu Phe Trp Leu Gly Leu Glu Lys Val His Ser Ile Thr Gly Asp Arg
305             310                315                320
Asn Ser Arg Leu Ala Val Gln Leu Arg Asp Trp Asp Gly Asn Ala Glu
             325                330                335
Leu Leu Gln Phe Ser Val His Leu Gly Gly Glu Asp Thr Ala Tyr Ser
             340                345                350
Leu Gln Leu Thr Ala Pro Val Ala Gly Gln Leu Gly Ala Thr Thr Val
     355                360                365
Pro Pro Ser Gly Leu Ser Val Pro Phe Ser Thr Trp Asp Gln Asp His
     370                375                380
```

```
Asp Leu Arg Arg Asp Lys Asn Cys Ala Lys Ser Leu Ser Gly Gly Trp
385             390             395             400
Trp Phe Gly Thr Cys Ser His Ser Asn Leu Asn Gly Gln Tyr Phe Arg
            405             410             415
Ser Ile Pro Gln Gln Arg Gln Lys Leu Lys Lys Gly Ile Phe Trp Lys
            420             425             430
Thr Trp Arg Gly Arg Tyr Tyr Pro Leu Gln Ala Thr Thr Met Leu Ile
            435             440             445
Gln Pro Met Ala Ala Glu Ala Ala Ser
        450             455     457
```

```
<210> 1274
<211> 359
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1274
Thr Leu Arg Ser Arg Pro Ala Gly Glu Ala Gly Tyr Leu Gly Trp Asp
  1             5               10              15
Pro Glu Gln Ala Gly Glu Gly Ser Ala Leu Ser Arg Pro Gly Ala Met
            20              25              30
Ala Ala Leu Met Thr Pro Gly Thr Gly Ala Pro Pro Ala Pro Gly Asp
        35              40              45
Phe Ser Gly Glu Gly Ser Gln Gly Leu Pro Asp Pro Ser Pro Glu Pro
        50              55              60
Lys Gln Leu Pro Glu Leu Ile Arg Met Lys Arg Asp Gly Gly Arg Leu
 65             70              75              80
Ser Glu Ala Asp Ile Arg Gly Phe Val Ala Ala Val Val Asn Gly Ser
            85              90              95
Ala Gln Gly Ala Gln Ile Gly Ala Trp Gly Gly Leu Gly Val Pro Asp
        100             105             110
Pro Asp Trp Glu Val Ser Pro Arg Asp Phe Gly Ser Leu Gly Val Arg
        115             120             125
Arg Cys Pro Thr Thr Ser Thr Gly Pro Arg Val Pro His Arg Cys Gly
    130             135             140
Leu Pro Pro Ser Arg Val Pro Pro His Thr Arg Gly Met Leu Met Ala
145             150             155             160
Ile Arg Leu Arg Gly Met Asp Leu Glu Glu Thr Ser Val Leu Thr Gln
            165             170             175
Ala Leu Ala Gln Ser Gly Gln Gln Leu Glu Trp Pro Glu Ala Trp Arg
        180             185             190
Gln Gln Leu Val Asp Lys His Ser Thr Gly Gly Val Gly Asp Lys Val
        195             200             205
Ser Leu Val Leu Ala Pro Ala Leu Ala Ala Cys Gly Cys Lys Val Ile
    210             215             220
Asn His Leu Leu Ser Arg Arg Glu Pro Ile Pro His Met Gln Gln Pro
225             230             235             240
Val His Pro Gln Ala Ala Pro Asn Leu Lys Pro Gly Pro Lys Pro Pro
            245             250             255
Arg Pro Tyr Gln Gly Phe Ser Pro Pro Cys Ser Pro Ala Gln Phe Ser
            260             265             270
Pro Pro Arg Ser Pro Ala Gln Arg Leu Gly Pro Leu Trp Leu Gln Thr
        275             280             285
Arg Pro Leu Gly Ala Gly Lys Arg Ser Thr Asp Gly Ile Gln Thr Pro
    290             295             300
Phe Pro Leu Gly Pro Gln Thr Ala Pro Pro Arg Glu Glu Leu Arg Thr
305             310             315             320
Ser Leu Pro Leu Pro Gln Ala Leu Phe Pro Gln Gly Gln Val Pro Thr
            325             330             335
```

```
Ser Ser Pro Thr Asp Thr Ser Gln Pro Arg Lys Leu Pro Phe His Ser
            340                     345             350
Leu Thr Ser Trp Ala Pro Leu
            355             359
```

```
<210> 1275
<211> 146
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(146)
<223> X = any amino acid or stop code
```

```
<400> 1275
Arg Ala Leu Arg Glu Leu Arg Glu Arg Val Thr His Gly Leu Ala Glu
 1               5                   10                  15
Ala Gly Arg Asp Arg Glu Asp Val Ser Thr Glu Leu Tyr Arg Ala Leu
            20                  25                  30
Glu Ala Val Arg Leu Gln Asn Ser Glu Gly Ser Cys Glu Pro Cys Pro
            35                  40                  45
Thr Ser Trp Leu Pro Phe Gly Gly Ser Cys Tyr Tyr Phe Ser Val Pro
            50                  55                  60
Lys Thr Thr Trp Ala Glu Ala Gln Gly His Cys Ala Asp Ala Ser Ala
 65                 70                  75                  80
His Leu Ala Ile Val Gly Gly Leu Gly Glu Gln Asp Phe Leu Ser Arg
                85                  90                  95
Asp Thr Ser Ala Leu Glu Tyr Trp Ile Gly Arg Arg Ala Val Gln His
            100                 105                 110
Leu Arg Lys Val Gln Gly Tyr Ser Trp Val Asp Gly Val Pro Leu Ser
            115                 120                 125
Phe Arg Xaa Trp Glu Gly His Pro Gly Glu Thr Trp Gly Pro Gln Val
    130                 135                 140
Arg Leu
145 146
```

```
<210> 1276
<211> 187
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1276
Arg Trp Pro Arg Ser Trp Pro Pro Arg Ala Gly Ala Ala Arg Gly Ala
 1               5                   10                  15
Ala Glu Ala Ala Met Val Gly Ala Leu Cys Gly Cys Trp Phe Arg Leu
            20                  25                  30
Gly Gly Ala Arg Pro Leu Ile Pro Leu Gly Pro Thr Val Val Gln Thr
            35                  40                  45
Ser Met Ser Arg Ser Gln Val Ala Leu Leu Gly Leu Ser Leu Leu Leu
            50                  55                  60
Met Leu Leu Leu Tyr Val Gly Leu Pro Gly Pro Pro Glu Gln Thr Ser
 65                 70                  75                  80
Cys Leu Trp Gly Asp Pro Asn Val Thr Val Leu Ala Gly Leu Thr Pro
```

782

```
                        85                    90                    95
Gly Asn Ser Pro Ile Phe Tyr Arg Glu Val Leu Pro Leu Asn Gln Ala
                    100                   105                   110
His Arg Val Glu Val Cys Cys Phe Met Glu Arg Pro Leu Thr Leu Thr
        115                   120                   125
Arg Gly Ser Ser Trp Ala His Cys Ser Tyr Cys His Arg Gly Ala Thr
    130                   135                   140
Gly Pro Trp Pro Leu Thr Phe Gln Val Leu Gly Thr Arg His Leu Gln
145                   150                   155                   160
Arg Arg Gln Ala Gln Arg Gln Gly Gly Gln Arg Cys Trp Ser Gly Arg
                165                   170                   175
Cys Gly Thr Trp Arg Tyr Arg Met Pro Cys Trp
                180                   185     187
```

```
        <210> 1277
        <211> 481
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1277
Gln Glu Asn Gln Leu Glu Lys Lys Met Lys Phe Leu Ile Phe Ala Phe
1                   5                   10                    15
Phe Gly Gly Val His Leu Leu Ser Leu Cys Ser Gly Lys Ala Ile Cys
                20                    25                    30
Lys Asn Gly Ile Ser Lys Arg Thr Phe Glu Glu Ile Lys Glu Glu Ile
            35                    40                    45
Ala Ser Cys Gly Asp Val Ala Lys Ala Ile Ile Asn Leu Ala Val Tyr
        50                    55                    60
Gly Lys Ala Gln Asn Arg Ser Tyr Glu Arg Leu Ala Leu Leu Val Asp
65                    70                    75                    80
Thr Val Gly Pro Arg Leu Ser Gly Ser Lys Asn Leu Glu Lys Ala Ile
                85                    90                    95
Gln Ile Met Tyr Gln Asn Leu Gln Gln Asp Gly Leu Glu Lys Val His
            100                   105                   110
Leu Glu Pro Val Arg Ile Pro His Trp Glu Arg Gly Glu Glu Ser Ala
        115                   120                   125
Val Met Leu Glu Pro Arg Ile His Lys Ile Ala Ile Leu Gly Leu Gly
    130                   135                   140
Ser Ser Ile Gly Thr Pro Pro Glu Gly Ile Thr Ala Glu Val Leu Val
145                   150                   155                   160
Val Thr Ser Phe Asp Glu Leu Gln Arg Arg Ala Ser Glu Ala Arg Gly
                165                   170                   175
Lys Ile Val Val Tyr Asn Gln Pro Tyr Ile Asn Tyr Ser Arg Thr Val
                180                   185                   190
Gln Tyr Arg Thr Gln Gly Ala Val Glu Ala Ala Lys Val Gly Ala Leu
            195                   200                   205
Ala Ser Leu Ile Arg Ser Val Ala Ser Phe Ser Ile Tyr Ser Pro His
    210                   215                   220
Thr Gly Ile Gln Glu Tyr Gln Asp Gly Val Pro Lys Ile Pro Thr Ala
225                   230                   235                   240
Cys Ile Thr Val Glu Asp Ala Glu Met Met Ser Arg Met Ala Ser His
                245                   250                   255
Gly Ile Lys Ile Val Ile Gln Leu Lys Met Gly Ala Lys Thr Tyr Pro
            260                   265                   270
Asp Thr Asp Ser Phe Asn Thr Val Ala Glu Ile Thr Gly Ser Lys Tyr
        275                   280                   285
Pro Glu Gln Val Val Leu Val Ser Gly His Leu Asp Ser Trp Asp Val
    290                   295                   300
Gly Gln Gly Ala Met Asp Asp Gly Gly Gly Ala Phe Ile Ser Trp Glu
```

```
305                      310                      315                .       320
Ala Leu Ser Leu Ile Lys Asp Leu Gly Leu Arg Pro Lys Arg Thr Leu
                    325                      330                      335
Arg Leu Val Leu Trp Thr Ala Glu Glu Gln Gly Gly Val Gly Ala Phe
                340                      345                      350
Gln Tyr Tyr Gln Leu His Lys Val Asn Ile Ser Asn Tyr Ser Leu Val
            355                      360                      365
Met Glu Ser Asp Ala Gly Thr Phe Leu Pro Thr Gly Leu Gln Phe Thr
        370                      375                      380
Gly Ser Glu Lys Ala Arg Ala Ile Met Glu Glu Val Met Ser Leu Leu
    385                      390                      395                      400
Gln Pro Leu Asn Ile Thr Gln Val Leu Ser His Gly Glu Gly Thr Asp
                    405                      410                      415
Ile Asn Phe Trp Ile Gln Ala Gly Val Pro Gly Ala Ser Leu Leu Asp
                420                      425                      430
Asp Leu Tyr Lys Tyr Phe Phe Phe His His Ser His Gly Asp Thr Met
            435                      440                      445         .
Thr Val His Gly Ile Gln Thr Gln Met Asn Val Ala Ala Ala Val Trp
        450                      455                      460
Ala Val Val Ser Tyr Val Val Ala Asp Met Glu Glu Met Leu Pro Arg
    465                      470                      475                      480
Ser
481
```

```
<210> 1278
<211> 428
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1278
Thr Lys Pro Arg Lys Arg Arg His Gln Pro Ala Ser Gln Arg Gln Arg
  1                  5                    10                       15
Pro Trp Ser Ser Asp Ser Thr Gly Asp Leu Leu Ala Arg Gly Lys Gly
            20                   25                       30
Arg Lys Glu Glu Asn Lys Gly Ser Asp Arg Val Ser Leu Ala Pro Pro
        35                   40                       45
Ser Leu Arg Arg Pro Met Met Cys Gln Ser Glu Ala Arg Gln Gly Pro
    50                   55      .          60
Glu Leu Arg Ala Ala Lys Trp Leu His Phe Pro Gln Leu Ala Leu Arg
65                   70                   75                       80
Arg Arg Leu Gly Gln Leu Ser Cys Met Ser Arg Pro Ala Leu Lys Leu
                85                   90                       95
Arg Ser Trp Pro Leu Thr Val Leu Tyr Tyr Leu Leu Pro Phe Gly Ala
            100                  105                      110
Leu Arg Pro Leu Ser Arg Val Gly Trp Arg Pro Val Ser Arg Val Ala
        115                  120                      125
Leu Tyr Lys Ser Val Pro Thr Arg Leu Leu Ser Arg Ala Trp Gly Arg
    130                  135                      140
Leu Asn Gln Val Glu Leu Pro His Trp Leu Arg Arg Pro Val Tyr Ser
145                  150                      155                      160
Leu Tyr Ile Trp Thr Phe Gly Val Asn Met Lys Glu Ala Ala Val Glu
                165                  170                      175
Asp Leu His His Tyr Arg Asn Leu Ser Glu Phe Phe Arg Arg Lys Leu
            180                  185                      190
Lys Pro Gln Ala Arg Pro Val Cys Gly Leu His Ser Val Ile Ser Pro
        195                  200                      205
Ser Asp Gly Arg Ile Leu Asn Phe Gly Gln Val Lys Asn Cys Glu Val
    210                  215                      220
Glu Gln Val Lys Gly Val Thr Tyr Ser Leu Glu Ser Phe Leu Gly Pro
```

```
 225                    230                  235                    240
Arg Met Cys Thr Glu Asp Leu Pro Phe Pro Pro Ala Ala Ser Cys Asp
                245                  250                  255
Ser Phe Lys Asn Gln Leu Val Thr Arg Glu Gly Asn Glu Leu Tyr His
                260                  265                  270
Cys Val Ile Tyr Leu Ala Pro Gly Asp Tyr His Cys Phe His Ser Pro
                275                  280                  285
Thr Asp Trp Thr Val Ser His Arg Arg His Phe Pro Gly Ser Leu Met
   290                  295                  300
Ser Val Asn Pro Gly Met Ala Arg Trp Ile Lys Glu Leu Phe Cys His
305                  310                  315                  320
Asn Glu Arg Val Val Leu Thr Gly Asp Trp Lys His Gly Phe Phe Ser
                325                  330                  335
Leu Thr Ala Val Gly Ala Thr Asn Trp Gly Ser Ile Arg Ile Tyr Phe
                340                  345                  350
Asp Arg Asp Leu His Thr Asn Ser Pro Arg His Ser Lys Gly Ser Tyr
                355                  360                  365
Asn Asp Phe Ser Phe Val Thr His Thr Asn Arg Glu Gly Val Pro Met
   370                  375                  380
Arg Lys Gly Glu His Leu Gly Glu Phe Asn Leu Gly Ser Thr Ile Val
385                  390                  395                  400
Leu Ile Phe Glu Ala Pro Lys Asp Phe Asn Phe Gln Leu Lys Thr Gly
                405                  410                  415
Gln Lys Ile Arg Phe Gly Glu Ala Leu Gly Ser Leu
                420                  425       428
```

```
        <210> 1279
        <211> 633
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1279
Leu Pro Glu Arg Ala Phe Gly Pro Arg Thr Pro Arg Ala Pro Arg Arg
 1               5                   10                  15
Arg Arg Arg Arg Leu Leu Leu Ser Pro Pro Arg Pro Pro Pro Pro
            20                  25                  30
Leu Asp Arg Glu Pro Arg Ala Pro Gly Pro Trp Leu Cys Pro Ser Arg
         35                  40                  45
Ala Gly Thr Ala Gln Asp Pro Ala Arg Ile Arg Glu Arg Arg Gly Arg
    50                  55                  60
Val Ala Gly Gly Ala Ala Gly Pro Ala Met Glu Leu Arg Ala Arg Gly
65                  70                  75                  80
Trp Trp Leu Leu Cys Ala Ala Ala Ala Leu Val Ala Cys Ala Arg Gly
                85                  90                  95
Asp Pro Ala Ser Lys Ser Arg Ser Cys Gly Glu Val Arg Gln Ile Tyr
                100                 105                 110
Gly Ala Lys Gly Phe Ser Ser Ser Asp Val Pro Gln Ala Glu Ile Ser
            115                 120                 125
Gly Glu His Leu Arg Ile Cys Pro Gln Gly Tyr Thr Cys Cys Thr Ser
            130                 135                 140
Glu Met Glu Glu Asn Leu Ala Asn Arg Ser His Ala Glu Leu Glu Thr
145                 150                 155                 160
Ala Leu Arg Asp Ser Ser Arg Val Leu Gln Ala Met Leu Ala Thr Gln
                165                 170                 175
Leu Arg Ser Phe Asp Asp His Phe Gln His Leu Leu Asn Asp Ser Glu
                180                 185                 190
Arg Thr Leu Gln Ala Thr Phe Pro Gly Ala Phe Gly Glu Leu Tyr Thr
            195                 200                 205
Gln Asn Ala Arg Ala Phe Arg Asp Leu Tyr Ser Glu Leu Arg Leu Tyr
```

```
            210                      215                      220
Tyr Arg Gly Ala Asn Leu His Leu Glu Glu Thr Leu Ala Glu Phe Trp
225                      230                      235                      240
Ala Arg Leu Leu Glu Arg Leu Phe Lys Gln Leu His Pro Gln Leu Leu
                245                      250                      255
Leu Pro Asp Asp Tyr Leu Asp Cys Leu Gly Lys Gln Ala Glu Ala Leu
                260                      265                      270
Arg Pro Phe Gly Glu Ala Pro Arg Glu Leu Arg Leu Arg Ala Thr Arg
        275                      280                      285
Ala Phe Val Ala Ala Arg Ser Phe Val Gln Gly Leu Gly Val Ala Ser
        290                      295                      300
Asp Val Val Arg Lys Val Ala Gln Val Pro Leu Gly Pro Glu Cys Ser
305                      310                      315                      320
Arg Ala Val Ile Glu Ala Gly Ser Tyr Cys Ala Leu His Cys Val Gly
                325                      330                      335
Val Pro Gly Ala Arg Pro Cys Pro Asp Tyr Cys Arg Asn Val Leu Lys
                340                      345                      350
Gly Cys Leu Ala Asn Gln Ala Asp Leu Asp Ala Glu Trp Arg Asn Leu
        355                      360                      365
Leu Asp Ser Met Val Leu Ile Thr Asp Lys Phe Trp Gly Thr Ser Gly
        370                      375                      380
Val Glu Ser Val Ile Gly Ser Val His Thr Trp Leu Ala Glu Ala Ile
385                      390                      395                      400
Asn Ala Leu Gln Asp Asn Arg Asp Thr Leu Thr Ala Lys Val Ile Gln
                405                      410                      415
Gly Cys Gly Asn Pro Lys Val Asn Pro Gln Gly Pro Gly Pro Glu Glu
                420                      425                      430
Lys Arg Arg Arg Gly Lys Leu Ala Pro Arg Glu Arg Pro Pro Ser Gly
        435                      440                      445
Thr Leu Glu Lys Leu Val Ser Glu Ala Lys Ala Gln Leu Arg Asp Val
        450                      455                      460
Gln Asp Phe Trp Ile Ser Leu Pro Gly Thr Leu Cys Ser Glu Lys Met
465                      470                      475                      480
Ala Leu Ser Thr Ala Ser Asp Asp Arg Cys Trp Asn Gly Met Ala Arg
                485                      490                      495
Gly Arg Tyr Leu Pro Glu Val Met Gly Asp Gly Leu Ala Asn Gln Ile
                500                      505                      510
Asn Asn Pro Glu Val Glu Val Asp Ile Thr Lys Pro Asp Met Thr Ile
        515                      520                      525
Arg Gln Gln Ile Met Gln Leu Lys Ile Met Thr Asn Arg Leu Arg Ser
        530                      535                      540
Ala Tyr Asn Gly Asn Asp Val Asp Phe Gln Asp Ala Ser Asp Asp Gly
545                      550                      555                      560
Ser Gly Ser Gly Ser Gly Asp Gly Cys Leu Asp Asp Leu Cys Gly Arg
                565                      570                      575
Lys Val Ser Arg Lys Ser Ser Ser Arg Thr Pro Leu Thr His Ala
        580                      585                      590
Leu Pro Gly Leu Ser Glu Gln Glu Gly Gln Lys Thr Ser Ala Ala Ser
        595                      600                      605
Cys Pro Gln Pro Pro Thr Phe Leu Leu Pro Leu Leu Leu Phe Leu Ala
    610                      615                      620
Leu Thr Val Ala Arg Pro Arg Trp Arg
625                      630          633
```

```
<210> 1280
<211> 133
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(133)
<223> X = any amino acid or stop code
```

<400> 1280

```
Ala Thr Glu Leu Thr Arg Ala Gly Met Glu Ala Ser Ala Leu Thr Lys
1               5                   10                  15
Ser Ala Val Thr Ser Val Ala Lys Val Val Arg Val Ala Ser Gly Ser
            20                  25                  30
Ala Val Val Leu Pro Leu Ala Arg Ile Ala Thr Ser Cys Asp Xaa Arg
        35                  40                  45
Val Gly Gly Pro Val Gln Ala Val Pro Met Val Leu Ser Ala Met Gly
    50                  55                  60
Leu Gln Leu Arg Ala Gly Ile Ala Ser Ser Ser Ile Ala Ala Lys Met
65                  70                  75                  80
Met Ser Ala Ala Ala Ile Ala Asn Gly Gly Gly Val Ser Pro Gly Gln
            85                  90                  95
Pro Leu Trp Leu Leu Leu Gln Ser Leu Gly Ala Thr Gly Leu Ser Gly
            100                 105                 110
Leu Thr Lys Phe Ile Leu Gly Ser Ile Gly Ser Ala Ile Ala Ala Val
        115                 120                 125
Ile Ala Arg Phe Tyr
130             133
```

<210> 1281
<211> 457
<212>Amino acid
<213> Homo sapiens

<400> 1281

```
Thr Asn Gly Arg Asn Leu Leu His His Trp Ile Leu Gly Val Cys Gly
1               5                   10                  15
Met His Pro His His Gln Glu Thr Leu Lys Lys Asn Arg Val Val Leu
            20                  25                  30
Ala Lys Gln Leu Leu Leu Ser Glu Leu Leu Glu His Leu Leu Glu Lys
        35                  40                  45
Asp Ile Ile Thr Leu Glu Met Arg Glu Leu Ile Gln Ala Lys Val Gly
    50                  55                  60
Ser Phe Ser Gln Asn Val Glu Leu Leu Asn Leu Leu Pro Lys Arg Gly
65                  70                  75                  80
Pro Gln Ala Phe Asp Ala Phe Cys Glu Ala Leu Arg Glu Thr Lys Gln
            85                  90                  95
Gly His Leu Glu Asp Met Leu Leu Thr Thr Leu Ser Gly Leu Gln His
            100                 105                 110
Val Leu Pro Pro Leu Ser Cys Asp Tyr Asp Leu Ser Leu Pro Phe Pro
        115                 120                 125
Val Cys Glu Ser Cys Pro Leu Tyr Lys Lys Leu Arg Leu Ser Thr Asp
    130                 135                 140
Thr Val Glu His Ser Leu Asp Asn Lys Asp Gly Pro Val Cys Leu Gln
145                 150                 155                 160
Val Lys Pro Cys Thr Pro Glu Phe Tyr Gln Thr His Phe Gln Leu Ala
            165                 170                 175
Tyr Arg Leu Gln Ser Arg Pro Arg Gly Leu Ala Leu Val Leu Ser Asn
        180                 185                 190
Val His Phe Thr Gly Glu Lys Glu Leu Glu Phe Arg Ser Gly Gly Asp
    195                 200                 205
Val Asp His Ser Thr Leu Val Thr Leu Phe Lys Leu Leu Gly Tyr Asp
    210                 215                 220
```

Val His Val Leu Cys Asp Gln Thr Ala Gln Glu Met Gln Glu Lys Leu
225   230   235   240
Gln Asn Phe Ala Gln Leu Pro Ala His Arg Val Thr Asp Ser Cys Ile
                245   250   255
Val Ala Leu Leu Ser His Gly Val Glu Gly Ala Ile Tyr Gly Val Asp
            260   265   270
Gly Lys Leu Leu Gln Leu Gln Glu Val Phe Gln Leu Phe Asp Asn Ala
        275   280   285
Asn Cys Pro Ser Leu Gln Asn Lys Pro Lys Met Phe Phe Ile Gln Ala
    290   295   300
Cys Arg Gly Gly Ala Ile Gly Ser Leu Gly His Leu Leu Leu Phe Thr
305   310   315   320
Ala Ala Thr Ala Ser Leu Ala Leu Glu Thr Asp Arg Gly Val Asp Gln
            325   330   335
Gln Asp Gly Lys Asn His Ala Gly Ser Pro Gly Cys Glu Glu Ser Asp
        340   345   350
Ala Gly Lys Glu Lys Leu Pro Lys Met Arg Leu Pro Thr Arg Ser Asp
    355   360   365
Met Ile Cys Gly Tyr Ala Cys Leu Lys Gly Thr Ala Ala Met Arg Asn
370   375   380
Thr Lys Arg Gly Ser Trp Tyr Ile Glu Ala Leu Ala Gln Val Phe Ser
385   390   395   400
Glu Arg Ala Cys Asp Met His Val Ala Asp Met Leu Val Lys Val Asn
            405   410   415
Ala Leu Ile Lys Asp Arg Glu Gly Tyr Ala Pro Gly Thr Glu Phe His
        420   425   430
Arg Cys Lys Glu Met Ser Glu Tyr Cys Ser Thr Leu Cys Arg His Leu
    435   440   445
Tyr Leu Phe Pro Gly His Pro Pro Thr
450   455   457

```
         <210> 1282
         <211> 195
         <212>Amino acid
         <213> Homo sapiens


         <400> 1282
```

Val Arg Gly Lys Glu Val Met Ala Ala Leu Cys Arg Thr Arg Ala Val
1   5   10   15
Ala Ala Glu Ser His Phe Leu Arg Val Phe Leu Phe Phe Arg Pro Phe
            20   25   30
Arg Gly Val Gly Thr Glu Ser Gly Ser Glu Ser Gly Ser Ser Asn Ala
        35   40   45
Lys Glu Pro Lys Thr Arg Ala Gly Gly Phe Ala Ser Ala Leu Glu Arg
    50   55   60
His Ser Glu Leu Leu Gln Lys Val Glu Pro Leu Gln Lys Gly Ser Pro
65   70   75   80
Lys Asn Val Glu Ser Phe Ala Ser Met Leu Arg His Ser Pro Leu Thr
                85   90   95
Gln Met Gly Pro Ala Lys Asp Lys Leu Val Ile Gly Arg Ile Phe His
            100   105   110
Ile Val Glu Asn Asp Leu Tyr Ile Asp Phe Gly Gly Lys Phe His Cys
        115   120   125
Val Cys Arg Arg Pro Glu Val Asp Gly Glu Lys Tyr Gln Lys Gly Thr
    130   135   140
Arg Val Arg Leu Arg Leu Leu Asp Leu Glu Leu Thr Ser Arg Phe Leu
145   150   155   160
Gly Ala Thr Thr Asp Thr Thr Val Leu Glu Ala Asn Ala Val Leu Leu
            165   170   175

Gly Ile Gln Glu Ser Lys Asp Ser Arg Ser Lys Glu Glu His Leu Glu
            180   185   190
Lys Tyr Ile
        195

        <210> 1283
        <211> 1499
        <212>Amino acid
        <213> Homo sapiens

        <400> 1283
Ile Pro Gly Ala Ser Pro Ala Pro Arg Arg Ala Ala Pro Leu Arg Leu
 1   5   10   15
Gly Leu Arg Leu Ala Ser Gly Trp Ala Arg Ala Pro Gly Gly Val Ser
            20   25   30
Pro Val Pro Gly Pro Gly Met Gly Gly Asp Ala Pro Thr Met Ala Arg
            35   40   45
Ala Gln Ala Leu Val Leu Glu Leu Thr Phe Gln Leu Cys Ala Pro Glu
     50   55   60
Thr Glu Thr Pro Glu Val Gly Cys Thr Phe Glu Glu Gly Ser Asp Pro
 65   70   75   80
Ala Val Pro Cys Glu Tyr Ser Gln Ala Gln Tyr Asp Asp Phe Gln Trp
            85   90   95
Glu Gln Val Arg Ile His Pro Gly Thr Arg Ala Pro Ala Asp Leu Pro
            100   105   110
His Gly Ser Tyr Leu Met Val Asn Thr Ser Gln His Ala Pro Gly Gln
            115   120   125
Arg Ala His Val Ile Phe Gln Ser Leu Ser Glu Asn Asp Thr His Cys
     130   135   140
Val Gln Phe Ser Tyr Phe Leu Tyr Ser Arg Asp Gly His Ser Pro Gly
145   150   155   160
Thr Leu Gly Val Tyr Val Arg Val Asn Gly Gly Pro Leu Gly Ser Ala
            165   170   175
Val Trp Asn Met Thr Gly Ser His Gly Arg Gln Trp His Gln Ala Glu
            180   185   190
Leu Ala Val Ser Thr Phe Trp Pro Asn Glu Tyr Gln Val Leu Phe Glu
            195   200   205
Ala Leu Ile Ser Pro Asp Arg Arg Gly Tyr Met Gly Leu Asp Asp Ile
     210   215   220
Leu Leu Leu Ser Tyr Pro Cys Ala Lys Ala Pro His Phe Ser Arg Leu
225   230   235   240
Gly Asp Val Glu Val Asn Ala Gly Gln Asn Ala Ser Phe Gln Cys Met
            245   250   255
Ala Ala Gly Arg Ala Ala Glu Ala Glu Arg Phe Leu Leu Gln Arg Gln
            260   265   270
Ser Gly Ala Leu Val Pro Ala Ala Gly Val Arg His Ile Ser His Arg
            275   280   285
Arg Phe Leu Ala Thr Phe Pro Leu Ala Ala Val Ser Arg Ala Glu Gln
     290   295   300
Asp Leu Tyr Arg Cys Val Ser Gln Ala Pro Arg Gly Arg Gly Thr Ser
305   310   315   320
Leu Asn Phe Ala Glu Phe Met Val Lys Glu Pro Pro Thr Pro Ile Ala
            325   330   335
Pro Pro Gln Leu Leu Arg Ala Gly Pro Thr Tyr Leu Ile Ile Gln Leu
            340   345   350
Asn Thr Asn Ser Ile Ile Gly Asp Gly Pro Ile Val Arg Lys Glu Ile
     355   360   365
Glu Tyr Arg Met Ala Arg Gly Pro Trp Ala Glu Val His Ala Val Ser
     370   375   380

789

```
Leu Gln Thr Tyr Lys Leu Trp His Leu Asp Pro Asp Thr Glu Tyr Glu
385                 390                 395                 400
Ile Ser Val Leu Leu Thr Arg Pro Gly Asp Gly Gly Thr Gly Arg Pro
                405                 410                 415
Gly Pro Pro Leu Ile Ser Arg Thr Lys Cys Ala Glu Pro Met Arg Ala
                420                 425                 430
Pro Lys Gly Leu Ala Phe Ala Glu Ile Gln Ala Arg Gln Leu Thr Leu
                435                 440                 445
Gln Trp Glu Pro Leu Gly Tyr Asn Val Thr Arg Cys His Thr Tyr Thr
        450                 455                 460
Val Ser Leu Cys Tyr His Tyr Thr Leu Gly Ser Ser His Asn Gln Thr
465                 470                 475                 480
Ile Arg Glu Cys Val Lys Thr Glu Gln Gly Val Ser Arg Tyr Thr Met
                485                 490                 495
Lys Asn Leu Leu Pro Tyr Arg Asn Val His Val Arg Leu Val Leu Thr
                500                 505                 510
Asn Pro Glu Gly Arg Lys Glu Gly Lys Glu Val Thr Phe Gln Thr Asp
        515                 520                 525
Glu Asp Val Pro Ser Gly Ile Ala Ala Glu Ser Leu Thr Phe Thr Pro
        530                 535                 540
Leu Glu Asp Met Ile Phe Leu Lys Trp Glu Glu Pro Gln Glu Pro Asn
545                 550                 555                 560
Gly Leu Ile Thr Gln Tyr Glu Ile Ser Tyr Gln Ser Ile Glu Ser Ser
                565                 570                 575
Asp Pro Ala Val Asn Val Pro Gly Pro Arg Arg Thr Ile Ser Lys Leu
                580                 585                 590
Arg Asn Glu Thr Tyr His Val Phe Ser Asn Leu His Pro Gly Thr Thr
        595                 600                 605
Tyr Leu Phe Ser Val Arg Ala Arg Thr Gly Lys Gly Phe Gly Gln Ala
        610                 615                 620
Ala Leu Thr Glu Ile Thr Thr Asn Ile Ser Ala Pro Ser Phe Asp Tyr
625                 630                 635                 640
Ala Asp Met Pro Ser Pro Leu Gly Glu Ser Glu Asn Thr Ile Thr Val
                645                 650                 655
Leu Leu Arg Pro Ala Gln Gly Arg Gly Ala Pro Ile Ser Val Tyr Gln
                660                 665                 670
Val Ile Val Glu Glu Glu Gln Gly Ser Arg Arg Leu Arg Arg Glu Pro
        675                 680                 685
Gly Gly Gln Asp Cys Phe Pro Val Pro Leu Thr Phe Glu Ala Ala Leu
        690                 695                 700
Ala Arg Gly Leu Val Asp Tyr Phe Gly Ala Glu Leu Ala Ala Ser Ser
705                 710                 715                 720
Leu Pro Glu Ala Met Pro Phe Thr Val Gly Asp Asn Lys Thr Tyr Arg
                725                 730                 735
Gly Phe Trp Asn Pro Pro Leu Glu Pro Arg Lys Ala Tyr Leu Ile Tyr
                740                 745                 750
Phe Gln Ala Ala Ser His Leu Lys Gly Glu Thr Arg Leu Asn Cys Ile
        755                 760                 765
Arg Ile Ala Arg Lys Ala Ala Cys Lys Glu Ser Lys Arg Pro Leu Glu
        770                 775                 780
Val Ser Gln Arg Ser Glu Glu Met Gly Leu Ile Leu Gly Ile Cys Ala
785                 790                 795                 800
Gly Gly Leu Ala Val Leu Ile Leu Leu Leu Gly Ala Ile Ile Val Ile
                805                 810                 815
Ile Arg Lys Gly Arg Asp His Tyr Ala Tyr Ser Tyr Tyr Pro Lys Pro
                820                 825                 830
Val Asn Met Thr Lys Ala Thr Val Asn Tyr Arg Gln Glu Lys Thr His
        835                 840                 845
Met Met Ser Ala Val Asp Arg Ser Phe Thr Asp Gln Ser Thr Leu Gln
850                 855                 860
Glu Asp Glu Arg Leu Gly Leu Ser Phe Met Asp Thr His Gly Tyr Ser
865                 870                 875                 880
Thr Arg Gly Asp Gln Arg Ser Gly Gly Val Thr Glu Ala Ser Ser Leu
                885                 890                 895
```

Leu Gly Gly Ser Pro Arg Arg Pro Cys Gly Arg Lys Gly Ser Pro Tyr
          900   905   910
His Thr Gly Gln Leu His Pro Ala Val Arg Val Ala Asp Leu Leu Gln
          915   920   925
His Ile Asn Gln Met Lys Thr Ala Glu Gly Tyr Gly Phe Lys Gln Glu
     930   935   940
Tyr Glu Ser Phe Phe Glu Gly Trp Asp Ala Thr Lys Lys Lys Asp Lys
945   950   955   960
Val Lys Gly Ser Arg Gln Glu Pro Met Pro Ala Tyr Asp Arg His Arg
               965   970   975
Val Lys Leu His Pro Met Leu Gly Asp Pro Asn Ala Asp Tyr Ile Asn
          980   985   990
Ala Asn Tyr Ile Asp Ile Arg Ile Asn Arg Glu Gly Tyr His Arg Ser
          995   1000   1005
Asn His Phe Ile Ala Thr Gln Gly Pro Lys Pro Glu Met Val Tyr Asp
     1010   1015   1020
Phe Trp Arg Met Val Trp Gln Glu His Cys Ser Ser Ile Val Met Ile
1025   1030   1035   1040
Thr Lys Leu Val Glu Val Gly Arg Val Lys Cys Ser Arg Tyr Trp Pro
          1045   1050   1055
Glu Asp Ser Asp Thr Tyr Gly Asp Ile Lys Ile Met Leu Val Lys Thr
          1060   1065   1070
Glu Thr Leu Ala Glu Tyr Val Val Arg Thr Phe Ala Leu Glu Arg Arg
     1075   1080   1085
Gly Tyr Ser Ala Arg His Glu Val Arg Gln Phe His Phe Thr Ala Trp
     1090   1095   1100
Pro Glu His Gly Val Pro Tyr His Ala Thr Gly Leu Leu Ala Phe Ile
1105   1110   1115   1120
Arg Arg Val Lys Ala Ser Thr Pro Pro Asp Ala Gly Pro Ile Val Ile
               1125   1130   1135
His Cys Ser Ala Gly Thr Gly Arg Thr Gly Cys Tyr Ile Val Leu Asp
          1140   1145   1150
Val Met Leu Asp Met Ala Glu Cys Glu Gly Val Val Asp Ile Tyr Asn
          1155   1160   1165
Cys Val Lys Thr Leu Cys Ser Arg Arg Val Asn Met Ile Gln Thr Glu
     1170   1175   1180
Glu Gln Tyr Ile Phe Ile His Asp Ala Ile Leu Glu Ala Cys Leu Cys
1185   1190   1195   1200
Gly Glu Thr Thr Ile Pro Val Ser Glu Phe Lys Ala Thr Tyr Lys Glu
          1205   1210   1215
Met Ile Arg Ile Asp Pro Gln Ser Asn Ser Ser Gln Leu Arg Glu Glu
          1220   1225   1230
Phe Gln Thr Leu Asn Ser Val Thr Pro Pro Leu Asp Val Glu Glu Cys
     1235   1240   1245
Ser Ile Ala Leu Leu Pro Arg Asn Arg Asp Lys Asn Arg Ser Met Asp
     1250   1255   1260
Val Leu Pro Pro Asp Arg Cys Leu Pro Phe Leu Ile Ser Thr Asp Gly
1265   1270   1275   1280
Asp Ser Asn Asn Tyr Ile Asn Ala Ala Leu Thr Asp Ser Tyr Thr Arg
               1285   1290   1295
Ser Ala Ala Phe Ile Val Thr Leu His Pro Leu Gln Ser Thr Thr Pro
          1300   1305   1310
Asp Phe Trp Gly Leu Val Tyr Asp Tyr Gly Cys Thr Ser Ile Val Met
     1315   1320   1325
Leu Asn Gln Leu Asn Gln Ser Asn Ser Ala Trp Pro Cys Leu Gln Tyr
     1330   1335   1340
Trp Pro Glu Pro Gly Arg Gln Gln Tyr Gly Leu Met Glu Val Glu Phe
1345   1350   1355   1360
Met Ser Gly Thr Ala Asp Glu Asp Leu Val Ala Arg Val Phe Arg Val
          1365   1370   1375
Gln Asn Ile Ser Arg Leu Gln Glu Gly His Leu Leu Val Arg His Phe
     1380   1385   1390
Gln Phe Leu Arg Trp Ser Ala Tyr Arg Asp Thr Pro Asp Ser Lys Lys
     1395   1400   1405

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```
Ala Phe Leu His Leu Leu Ala Glu Gly Asp Lys Trp Gln Ala Glu Ser
    1410                1415                1420
Gly Asp Gly Arg Thr Ile Val His Cys Leu Asn Gly Gly Gly Arg Ser
1425                1430                1435                1440
Gly Thr Phe Cys Ala Cys Ala Thr Val Leu Glu Met Ile Arg Cys His
            1445                1450                1455
Asn Leu Val Asp Val Phe Phe Ala Ala Lys Thr Leu Arg Asn Tyr Lys
        1460                1465                1470
Pro Asn Met Val Glu Thr Met Asp Gln Tyr His Phe Cys Tyr Asp Val
    1475                1480                1485
Ala Leu Glu Tyr Leu Glu Gly Leu Glu Ser Arg
    1490                1495        1499
```

```
<210> 1284
<211> 430
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1284
Thr Lys Pro Arg Lys Arg Arg His Gln Pro Ala Ser Gln Arg Gln Arg
 1           5               10                  15
Pro Trp Ser Ser Asp Ser Thr Gly Asp Leu Leu Ala Arg Gly Lys Gly
            20              25                  30
Arg Lys Glu Glu Asn Lys Gly Ser Asp Arg Val Ser Leu Ala Pro Pro
        35              40                  45
Ser Leu Arg Arg Pro Met Met Cys Gln Ser Glu Ala Arg Gln Gly Pro
    50              55                  60
Glu Leu Arg Ala Ala Lys Trp Leu His Phe Pro Gln Leu Ala Leu Arg
65              70                  75                      80
Arg Arg Leu Gly Gln Leu Ser Cys Met Ser Arg Pro Ala Leu Lys Leu
            85                  90                  95
Arg Ser Trp Pro Leu Thr Val Leu Tyr Tyr Leu Leu Pro Phe Gly Ala
            100             105                 110
Leu Arg Pro Leu Ser Arg Val Gly Trp Arg Pro Val Ser Arg Val Ala
        115             120                 125
Leu Tyr Lys Ser Val Pro Thr Arg Leu Leu Ser Arg Ala Trp Gly Arg
    130             135                 140
Leu Asn Gln Val Glu Leu Pro His Trp Leu Arg Arg Pro Val Tyr Ser
145             150                 155                     160
Leu Tyr Ile Trp Thr Phe Gly Val Asn Met Lys Glu Ala Ala Val Glu
            165                 170                 175
Asp Leu His His Tyr Arg Asn Leu Ser Glu Phe Phe Arg Arg Lys Leu
        180                 185                 190
Lys Pro Gln Ala Arg Pro Val Cys Gly Leu His Ser Val Ile Ser Pro
    195                 200                 205
Ser Asp Gly Arg Ile Leu Asn Phe Gly Gln Val Lys Asn Cys Glu Val
    210                 215                 220
Glu Gln Val Lys Gly Val Thr Tyr Ser Leu Glu Ser Phe Leu Gly Pro
225                 230                 235                 240
Arg Met Cys Thr Glu Asp Leu Pro Phe Pro Ala Ala Ser Cys Asp
            245                 250                 255
Ser Phe Lys Asn Gln Leu Val Thr Arg Glu Gly Asn Glu Leu Tyr His
        260                 265                 270
Cys Val Ile Tyr Leu Ala Pro Gly Asp Tyr His Cys Phe His Ser Pro
    275                 280                 285
Thr Asp Trp Thr Val Ser His Arg Arg His Phe Pro Gly Ser Leu Met
    290                 295                 300
Ser Val Asn Pro Gly Met Ala Arg Trp Ile Lys Glu Leu Phe Cys His
305                 310                 315                 320
```

```
Asn Glu Arg Val Val Leu Thr Gly Asp Trp Lys His Gly Phe Phe Ser
                325                     330                 335
Leu Thr Ala Val Gly Ala Thr Asn Trp Gly Ser Ile Arg Ile Tyr Phe
                340                     345                 350
Asp Arg Asp Leu His Thr Asn Ser Pro Arg His Ser Lys Gly Ser Tyr
                355         .           360                 365
Asn Asp Phe Ser Phe Val Thr His Thr Asn Arg Glu Gly Val Pro Met
        370                     375                 380
Ala Leu Arg Gly Glu His Leu Gly Gln Ser Phe Asn Leu Gly Ser Thr
385                     390                     395                 400
Ile Val Leu Ile Phe Glu Ala Pro Lys Asp Phe Asn Phe Gln Leu Lys
                    405                     410                     415
Thr Gly Gln Lys Ile Arg Phe Gly Glu Ala Leu Gly Ser Leu
            420                     425                 430
```

<210> 1285
<211> 957
<212> Amino acid
<213> Homo sapiens

<400> 1285
```
Ala Glu Leu Gly Leu Phe Gly Ser Leu Arg Phe Ser Ser Leu Leu His
1           .           5               10              15
Phe Pro Pro Arg Pro Arg Ser Pro Ala Ser Ala Cys Gly Pro Gly Glu
                20              25                  30
Gly Arg Met Glu Arg Gly Leu Pro Leu Leu Cys Ala Val Leu Ala Leu
            35              40          .           45
Val Leu Ala Pro Ala Gly Ala Phe Arg Asn Asp Lys Cys Gly Asp Thr
        50              55                  60
Ile Lys Ile Glu Ser Pro Gly Tyr Leu Thr Ser Pro Gly Tyr Pro His
65              70      .               75                  80
Ser Tyr His Pro Ser Glu Lys Cys Glu Trp Leu Ile Gln Ala Pro Asp
                85                  90                  95
Pro Tyr Gln Arg Ile Met Ile Asn Phe Asn Pro His Phe Asp Leu Glu
            100                 105                 110      .
Asp Arg Asp Cys Lys Tyr Asp Tyr Val Glu Val Phe Asp Gly Glu Asn
        115                 120                 125
Glu Asn Gly His Phe Arg Gly Lys Phe Cys Gly Lys Ile Ala Pro Pro
    130                 135                 140
Pro Val Val Ser Ser Gly Pro Phe Leu Phe Ile Lys Phe Val Ser Asp
145                 150                 155                 160
Tyr Glu Thr His Gly Ala Gly Phe Ser Ile Arg Tyr Glu Ile Phe Lys
                165     .           170                 175
Arg Gly Pro Glu Cys Ser Gln Asn Tyr Thr Thr Pro Ser Gly Val Ile
            180                 185                 190
Lys Ser Pro Gly Phe Pro Glu Lys Tyr Pro Asn Ser Leu Glu Cys Thr
        195                 200                 205
Tyr Ile Val Phe Ala Pro Lys Met Ser Glu Ile Ile Leu Asp Phe Glu
    210                 215                 220
Ser Phe Asp Leu Glu Pro Asp Ser Asn Pro Pro Gly Gly Met Phe Cys
225                 230                 235                 240
Arg Tyr Asp Arg Leu Glu Ile Trp Asp Gly Phe Pro Asp Val Gly Pro
            245                 250                 255
His Ile Gly Arg Tyr Cys Gly Gln Lys Thr Pro Gly Arg Ile Arg Ser
            260                 265                 270
Ser Ser Gly Ile Leu Ser Met Val Phe Tyr Thr Asp Ser Ala Ile Ala
        275                 280                 285
Lys Glu Gly Phe Ser Ala Asn Tyr Ser Val Leu Gln Ser Ser Val Ser
        290 .                   295                 300
```

```
Glu Asp Phe Lys Cys Met Glu Ala Leu Gly Met Glu Ser Gly Glu Ile
305             310             315             320
His Ser Asp Gln Ile Thr Ala Ser Ser Gln Tyr Ser Thr Asn Trp Ser
            325             330             335
Ala Glu Arg Ser Arg Leu Asn Tyr Pro Glu Asn Gly Trp Thr Pro Gly
            340             345             350
Glu Asp Ser Tyr Arg Glu Trp Ile Gln Val Asp Leu Gly Leu Leu Arg
            355             360             365
Phe Val Thr Ala Val Gly Thr Gln Gly Ala Ile Ser Lys Glu Thr Lys
370             375             380
Lys Lys Tyr Tyr Val Lys Thr Tyr Lys Ile Asp Val Ser Ser Asn Gly
385             390             395             400
Glu Asp Trp Ile Thr Ile Lys Glu Gly Asn Lys Pro Val Leu Phe Gln
            405             410             415
Gly Asn Thr Asn Pro Thr Asp Val Val Val Ala Val Phe Pro Lys Pro
            420             425             430
Leu Ile Thr Arg Phe Val Arg Ile Lys Pro Ala Thr Trp Glu Thr Gly
            435             440             445
Ile Ser Met Arg Phe Glu Val Tyr Gly Cys Lys Ile Thr Asp Tyr Pro
450             455             460
Cys Ser Gly Met Leu Gly Met Val Ser Gly Leu Ile Ser Asp Ser Gln
465             470             475             480
Ile Thr Ser Ser Asn Gln Gly Asp Arg Asn Trp Met Pro Glu Asn Ile
            485             490             495
Arg Leu Val Thr Ser Arg Ser Gly Trp Ala Leu Pro Pro Ala Pro His
            500             505             510
Ser Tyr Ile Asn Glu Trp Leu Gln Ile Asp Leu Gly Glu Glu Lys Ile
            515             520             525
Val Arg Gly Ile Ile Ile Gln Gly Gly Lys His Arg Glu Asn Lys Val
530             535             540
Phe Met Arg Lys Phe Lys Ile Gly Tyr Ser Asn Asn Gly Ser Asp Trp
545             550             555             560
Lys Met Ile Met Asp Asp Ser Lys Arg Lys Ala Lys Ser Phe Glu Gly
            565             570             575
Asn Asn Asn Tyr Asp Thr Pro Glu Leu Arg Thr Phe Pro Ala Leu Ser
            580             585             590
Thr Arg Phe Ile Arg Ile Tyr Pro Glu Arg Ala Thr His Gly Gly Leu
            595             600             605
Gly Leu Arg Met Glu Leu Leu Gly Cys Glu Val Glu Ala Pro Thr Ala
610             615             620
Gly Pro Thr Thr Pro Asn Gly Asn Leu Val Asp Glu Cys Asp Asp Asp
625             630             635             640
Gln Ala Asn Cys His Ser Gly Thr Gly Asp Asp Phe Gln Leu Thr Gly
            645             650             655
Gly Thr Thr Val Leu Ala Thr Glu Lys Pro Thr Val Ile Asp Ser Thr
            660             665             670
Ile Gln Ser Glu Phe Pro Thr Tyr Gly Phe Asn Cys Glu Phe Gly Trp
            675             680             685
Gly Ser His Lys Thr Phe Cys His Trp Glu His Asp Asn His Val Gln
            690             695             700
Leu Lys Trp Ser Val Leu Thr Ser Lys Thr Gly Pro Ile Gln Asp His
705             710             715             720
Thr Gly Asp Gly Asn Phe Ile Tyr Ser Gln Ala Asp Glu Asn Gln Lys
            725             730             735
Gly Lys Val Ala Arg Leu Val Ser Pro Val Val Tyr Ser Gln Asn Ser
            740             745             750
Ala His Cys Met Thr Phe Trp Tyr His Met Ser Gly Ser His Val Gly
            755             760             765
Thr Leu Arg Val Lys Leu Arg Tyr Gln Lys Pro Glu Glu Tyr Asp Gln
770             775             780
Leu Val Trp Met Ala Ile Gly His Gln Gly Asp His Trp Lys Glu Gly
785             790             795             800
Arg Val Leu Leu His Lys Ser Leu Lys Leu Tyr Gln Val Ile Phe Glu
            805             810             815
```

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Gly Glu Ile Gly Lys Gly Asn Leu Gly Gly Ile Ala Val Asp Asp Ile
            820   825   830
Ser Ile Asn Asn His Ile Ser Gln Glu Asp Cys Ala Lys Pro Ala Asp
            835   840   845
Leu Asp Lys Lys Asn Pro Glu Ile Lys Ile Asp Glu Thr Gly Ser Thr
    850   855   860
Pro Gly Tyr Glu Gly Glu Gly Glu Gly Asp Lys Asn Ile Ser Arg Lys
865   870   875   880
Pro Gly Asn Val Leu Lys Thr Leu Glu Pro Ile Leu Ile Thr Ile Ile
                885   890   895
Ala Met Ser Ala Leu Gly Val Leu Leu Gly Ala Val Cys Gly Val Val
            900   905   910
Leu Tyr Cys Ala Cys Trp His Asn Gly Met Ser Glu Arg Asn Leu Ser
        915   920   925
Ala Leu Glu Asn Tyr Asn Phe Glu Leu Val Asp Gly Val Lys Leu Lys
    930   935   940
Lys Asp Lys Leu Asn Thr Gln Ser Thr Tyr Ser Glu Ala
945   950   955   957

    <210> 1286
    <211> 173
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(173)
    <223> X = any amino acid or stop code

    <400> 1286
His Glu Gly Ser Ala Leu Thr Trp Ala Ser His Tyr Gln Glu Arg Leu
1   5   10   15
Asn Ser Glu Gln Ser Cys Leu Asn Glu Trp Thr Ala Met Ala Asp Leu
            20   25   30
Glu Ser Leu Arg Pro Pro Ser Ala Glu Pro Gly Gly Ser Val Cys Gly
        35   40   45
Gly Glu Gly Leu Gly Gly Gly Glu Gly Arg Ile Met Gln Trp Gly Ala
    50   55   60
Trp Trp Arg Gly Glu Arg Ala Pro Xaa Leu Arg Gly Ser Ala Pro Arg
65   70   75   80
Ser Ser Glu Gln Glu Gln Met Glu Gln Ala Ile Arg Ala Glu Leu Trp
                85   90   95
Lys Val Leu Asp Val Ser Asp Leu Glu Ser Val Thr Ser Lys Glu Ile
            100   105   110
Arg Gln Ala Leu Glu Leu Arg Leu Gly Leu Pro Leu Gln Pro Val Pro
        115   120   125
Xaa Leu His Arg Gln Pro Asp Ala Ala Ala Gly Gly Thr Ala Gly Pro
    130   135   140
Ser Leu Pro His Leu Pro Pro Pro Leu Pro Gly Leu Arg Val Glu Arg
145   150   155   160
Ser Lys Pro Gly Gly Ala Ala Glu Glu Gln Val Gly Leu
                165   170   173

    <210> 1287
    <211> 181
    <212>Amino acid
    <213> Homo sapiens

<400> 1287
```
Met Ala Ala Leu Asp Leu Arg Ala Glu Leu Asp Ser Leu Val Leu Gln
 1               5                  10                  15
Leu Leu Gly Asp Leu Glu Glu Leu Glu Gly Lys Arg Thr Val Leu Asn
            20                  25                  30
Ala Arg Val Glu Glu Gly Trp Leu Ser Leu Ala Lys Ala Arg Tyr Ala
        35                  40                  45
Met Gly Ala Lys Ser Val Gly Pro Leu Gln Tyr Ala Ser His Met Glu
    50                  55                  60
Pro Gln Val Cys Leu His Ala Ser Glu Ala Gln Glu Gly Leu Gln Lys
65                  70                  75                  80
Phe Lys Val Val Arg Ala Gly Val His Ala Pro Glu Glu Val Gly Pro
                85                  90                  95
Arg Glu Ala Gly Leu Arg Arg Arg Lys Gly Pro Thr Lys Thr Pro Glu
            100                 105                 110
Pro Glu Ser Ser Glu Ala Pro Gln Asp Pro Leu Asn Trp Phe Gly Ile
            115                 120                 125
Leu Val Pro His Ser Leu Arg Gln Ala Gln Ala Ser Phe Arg Asp Gly
    130                 135                 140
Leu Gln Leu Ala Ala Asp Ile Ala Ser Leu Gln Asn Arg Ile Asp Trp
145                 150                 155                 160
Gly Arg Ser Gln Leu Arg Gly Leu Gln Glu Lys Leu Lys Gln Leu Glu
                165                 170                 175
Pro Gly Ala Ala  *
            180
```

<210> 1288
<211> 216
<212>Amino acid
<213> Homo sapiens

<400> 1288
```
His Ser Asp Val Gly Ala Ala Thr Ala Val Leu Pro Leu Leu Thr Ala
 1               5                  10                  15
Val Leu Gly Val Thr Val Val Thr Arg Arg Asp Thr Glu Gly Pro Gly
            20                  25                  30
Arg Ala Ala Leu Val His Leu Thr Gly Ser Pro Arg Gln Lys Val Gly
        35                  40                  45
Thr Ser Gly Arg Glu Gly Leu Pro Gly Leu Gly Ala Ser Cys Ala Glu
    50                  55                  60
Ser Glu Leu Glu Arg Glu Thr Gln Glu Pro Arg Ser Arg Gly Arg Cys
65                  70                  75                  80
Ile Phe Gly Ala Ala Arg Trp Arg Gln Val Pro Leu Ala Ser Pro Gln
                85                  90                  95
Arg Pro Phe Leu Leu Ser Pro Gly Pro Arg Leu His Arg Met Gly Leu
            100                 105                 110
Pro Val Ser Trp Ala Pro Pro Ala Leu Trp Val Leu Gly Cys Cys Ala
            115                 120                 125
Leu Leu Leu Ser Leu Trp Ala Leu Cys Thr Ala Cys Arg Arg Pro Glu
    130                 135                 140
Asp Ala Val Ala Pro Arg Lys Arg Ala Arg Arg Gln Arg Ala Arg Leu
145                 150                 155                 160
Gln Gly Ser Ala Thr Ala Ala Glu Ala Val Ser Ala Lys Leu Ser Arg
                165                 170                 175
Gly Pro Gly Trp Gly Pro Gln Gly Thr Asp Gln Pro Ser Ser Pro Pro
```

```
                    180                185                 190
Val Pro Thr Glu Ala Asp Pro Pro Leu Leu Pro Gln Gln Val Gly His
        195                200                205
Gln Thr Ala Arg Ala Ala Pro Gly
    210                215 216
```

```
    <210> 1289
    <211> 148
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(148)
    <223> X = any amino acid or stop code
```

```
    <400> 1289
Leu Thr Gly Pro Gly Gln Arg Leu Ala Gly Thr Thr Glu Gly Pro Arg
1                 5                 10                15
Arg Cys Arg Gly Ser Ser Gln Ala Pro Thr Pro Thr Trp Lys Leu Val
        20                25                30
Asp Thr Arg Leu Cys Ala Ala Ala Pro Trp Leu Ala Ser Arg Ala Pro
        35                40                45
Gly His Tyr Ser Gln Met Leu Leu Val Asn Xaa Pro Cys Arg Lys Asp
    50                55                60
Trp Leu Val Ser Lys Trp Met Arg Thr Pro Val Cys Gly Gln Ser Pro
65                70                75                80
Ala Met Thr Asp Arg Pro Arg Ser Glu Ala Gly Arg Asp His Arg Arg
            85                90                95
Ala Lys Ala Leu Pro Gly Leu Ile Pro Gly Ser Asn Pro Asn Leu Glu
        100                105                110
Ala Cys Gly His Gln Ala Leu Cys Ser Ser Ser Val Ala Ser Val Gln
        115                120                125
Gly Pro Trp Pro Leu Leu Pro Asn Ala Ser Ser Pro Pro Thr Pro Gly
    130                135                140
Gln Pro Gln Pro
145                148
```

```
    <210> 1290
    <211> 170
    <212>Amino acid
    <213> Homo sapiens

    <220>
    <221> misc_feature
    <222> (1)...(170)
    <223> X = any amino acid or stop code
```

```
    <400> 1290
Lys His Arg Leu Cys Ser Leu Glu Gln Leu Met Thr Leu Ile Ser Ala
1                 5                 10                15
Ala Arg Glu Tyr Glu Ile Glu Phe Ile Tyr Ala Ile Ser Pro Gly Leu
        20                25                30
Asp Ile Thr Phe Ser Asn Pro Lys Glu Val Ser Thr Leu Lys Arg Lys
```

```
                35                    40                      45
     Leu Asp Gln Val Ser Gln Phe Gly Cys Arg Ser Phe Ala Leu Leu Phe
         50                      55                      60
     Asp Asp Ile Asp His Asn Met Cys Ala Ala Asp Lys Glu Val Phe Ser
     65                      70                      75                  80
     Ser Phe Ala His Ala Gln Val Ser Ile Thr Asn Glu Ile Tyr Gln Tyr
                     85                      90                      95
     Leu Gly Glu Pro Glu Thr Phe Leu Phe Cys Pro Thr Glu Tyr Cys Ile
             100                     105                     110
     Xaa Trp Leu Tyr Ile Xaa Leu Val Phe Leu Glu Tyr Ile Thr Tyr Lys
             115                     120                     125
     Gly Pro Trp Ala Pro Phe Ser Leu His Phe Pro Pro Pro Leu Val Cys
         130                     135                     140
     Lys Ser Arg Asn Leu Phe Leu Glu Asp Ile Phe Gln Asp Pro Lys Leu
     145                     150                     155                 160
     Glu Lys Phe Xaa Glu Leu Ile Asn Asp Asn
                     165                     170
```

```
     <210> 1291
     <211> 98
     <212> Amino acid
     <213> Homo sapiens
```

```
     <400> 1291
     Thr Ser Ala Leu Thr Gln Gly Leu Glu Arg Ile Pro Asp Gln Leu Gly
     1                   5                       10                      15
     Tyr Leu Val Leu Ser Glu Gly Ala Val Leu Ala Ser Ser Gly Asp Leu
                     20                      25                      30
     Glu Asn Asp Glu Gln Ala Ala Ser Ala Ile Ser Glu Leu Val Ser Thr
                 35                      40                      45
     Ala Cys Gly Phe Arg Leu His Arg Gly Met Asn Val Pro Phe Lys Arg
         50                      55                      60
     Leu Ser Val Val Phe Gly Glu His Thr Leu Leu Val Thr Val Ser Gly
     65                      70                      75                  80
     Gln Arg Val Phe Val Val Lys Arg Gln Asn Arg Gly Arg Glu Pro Ile
                     85                      90                      95
     Asp Val
         98
```

```
     <210> 1292
     <211> 142
     <212> Amino acid
     <213> Homo sapiens
```

```
     <400> 1292
     Ala Lys Arg Ala Glu Arg Thr Ser Arg Leu Gln Gly Leu Gln His Pro
     1                   5                       10                      15
     Ser Pro Pro Tyr Pro Pro Ala Thr Leu Gly Val Thr Pro Gly Gln Asp
                     20                      25                      30
     Arg Thr Leu Gln Leu Gln His Gln Cys Pro Ala Gly Arg Lys Ser Arg
                 35                      40                      45
     Lys Lys Lys Ser Lys Ala Thr Gln Leu Ser Pro Glu Asp Arg Val Glu
         50                      55                      60
     Asp Ala Leu Pro Pro Ser Lys Ala Pro Ser Arg Thr Arg Arg Ala Lys
```

```
     65                          70                     75                        80
Arg Asp Leu Pro Lys Arg Thr Ala Thr Gln Arg Pro Glu Gly Thr Ser
                        85                     90                     95
Leu Gln Gln Asp Pro Glu Ala Pro Thr Val Pro Lys Lys Gly Arg Arg
                100                    105                    110
Lys Gly Arg Gln Ala Ala Ser Gly His Cys Arg Pro Arg Lys Val Lys
                115                    120                    125
Ala Asp Ile Pro Ser Leu Glu Pro Glu Gly Thr Ser Ala Ser
     130                    135                    140    142
```

```
     <210> 1293
     <211> 89
     <212> Amino acid
     <213> Homo sapiens

     <220>
     <221> misc_feature
     <222> (1)...(89)
     <223> X = any amino acid or stop code
```

```
     <400> 1293
Arg Lys Ser Ser Trp Leu Gly Ala Val Ala His Ala Cys Asn Pro Ser
 1               5                    10                     15
Ser Leu Gly Gly Pro Gly Arg Gln Ile Thr Arg Ser Gly Val Arg Asp
                20                     25                    30
Gln Pro Gly Gln Tyr Gly Glu Thr Pro Ser Leu Leu Lys Ile Gln Thr
            35                     40                     45
Leu Ala Gly Arg Gly Gly Ala Cys Leu Xaa Ser His Ile Leu Arg Arg
     50                    55                     60
Leu Arg Gln Lys Asn Arg Leu Asn Leu Gly Gly Arg Gly Cys Ser Glu
 65                    70                     75                     80
Leu Arg Ser Arg His Cys Ala Pro Ala
                85                     89
```

```
     <210> 1294
     <211> 80
     <212> Amino acid
     <213> Homo sapiens
```

```
     <400> 1294
Ala Trp Asn Ser Ala Arg Gly Ala Val Ser Pro Leu Trp Val Pro Gly
 1               5                    10                     15
Cys Phe Leu Thr Leu Ser Val Thr Trp Ile Gly Ala Ala Pro Leu Ile
                20                     25                    30
Leu Ser Arg Ile Val Gly Gly Trp Glu Cys Glu Lys His Ser Gln Pro
            35                     40                     45
Trp Gln Val Leu Val Ala Ser Arg Gly Arg Ala Val Cys Gly Gly Val
     50                    55                     60
Leu Val His Pro Gln Trp Val Leu Thr Ala Ala His Cys Ile Arg Lys
 65                    70                        75                    80
```

```
      <210> 1295
      <211> 281
      <212>Amino acid
      <213> Homo sapiens



      <400> 1295
Ala Glu Met Ala Asp Asp Leu Gly Asp Glu Trp Trp Glu Asn Gln Pro
 1               5                  10                  15
Thr Gly Ala Gly Ser Ser Pro Glu Ala Ser Asp Gly Glu Gly Glu Gly
            20                  25                  30
Asp Thr Glu Val Met Gln Gln Glu Thr Val Pro Val Pro Val Pro Ser
        35                  40                  45
Glu Lys Thr Lys Gln Pro Lys Glu Cys Phe Leu Ile Gln Pro Lys Glu
     50                  55                  60
Arg Lys Glu Asn Thr Thr Lys Thr Arg Lys Arg Lys Lys Lys Ile
 65                  70                  75                  80
Thr Asp Val Leu Ala Lys Ser Glu Pro Lys Pro Gly Leu Pro Glu Asp
                 85                  90                  95
Leu Gln Lys Leu Met Lys Asp Tyr Tyr Ser Ser Arg Arg Leu Val Ile
            100                 105                 110
Glu Leu Glu Glu Leu Asn Leu Pro Asp Ser Cys Phe Leu Lys Ala Asn
        115                 120                 125
Asp Leu Thr His Ser Leu Ser Ser Tyr Leu Lys Glu Ile Cys Pro Lys
        130                 135                 140
Trp Val Lys Leu Arg Lys Asn His Ser Glu Lys Lys Ser Val Leu Met
145                 150                 155                 160
Leu Ile Ile Cys Ser Ser Ala Val Arg Ala Leu Glu Leu Ile Arg Ser
                165                 170                 175
Met Thr Ala Phe Arg Gly Asp Gly Lys Val Ile Lys Leu Phe Ala Lys
            180                 185                 190
His Ile Lys Val Gln Ala Gln Val Lys Leu Leu Glu Lys Arg Val Val
        195                 200                 205
His Leu Gly Val Gly Thr Pro Gly Arg Ile Lys Glu Leu Val Lys Gln
        210                 215                 220
Gly Gly Leu Asn Leu Ser Pro Leu Lys Phe Leu Val Phe Asp Trp Asn
225                 230                 235                 240
Trp Arg Asp Gln Lys Leu Arg Arg Met Met Asp Ile Pro Glu Ile Arg
                245                 250                 255
Lys Glu Val Phe Glu Leu Leu Glu Met Gly Val Leu Ser Leu Cys Lys
                260                 265                 270
Ser Glu Ser Leu Lys Leu Gly Leu Phe
            275                 280 281


      <210> 1296
      <211> 213
      <212>Amino acid
      <213> Homo sapiens



      <400> 1296
Arg Pro Gly Thr Ala Ile Trp Val Val Glu Cys Glu His Gly Arg Pro
 1               5                  10                  15
Ile Ala Glu Ser Glu Gly Gln Glu Gly Arg Gly His Ser Pro Pro Gly
            20                  25                  30
Pro Cys Ser Val Ala Gly Phe Leu Arg Gly Arg Leu Gly Arg Asn Leu
        35                  40                  45
```

```
Glu Ile Met Gly Ser Thr Trp Gly Ser Pro Gly Trp Val Arg Leu Ala
    50                      55                  60
Leu Cys Leu Thr Gly Leu Val Leu Ser Leu Tyr Ala Leu His Val Lys
65                  70                  75                  80
Ala Ala Arg Ala Arg Asp Arg Asp Tyr Arg Ala Leu Cys Asp Val Gly
                85                  90                  95
Thr Ala Ile Ser Cys Ser Arg Val Phe Ser Ser Arg Trp Gly Arg Gly
            100                 105                 110
Phe Gly Leu Val Glu His Val Leu Gly Gln Asp Ser Ile Leu Asn Gln
        115                 120                 125
Ser Asn Ser Ile Phe Gly Cys Ile Phe Tyr Thr Leu Gln Leu Leu Leu
    130                 135                 140
Gly Cys Leu Arg Thr Arg Trp Ala Ser Val Leu Met Leu Leu Ser Ser
145             150                 155                 160
Leu Val Ser Leu Ala Gly Ser Val Tyr Leu Ala Trp Ile Leu Phe Phe
                165                 170                 175
Val Leu Tyr Asp Phe Cys Ile Val Cys Ile Thr Thr Tyr Ala Ile Asn
            180                 185                 190
Val Ser Leu Met Trp Leu Ser Phe Arg Lys Val Gln Glu Pro Gln Gly
        195                 200                 205
Lys Ala Lys Arg His
210             213
```

```
        <210> 1297
        <211> 353
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1297
Glu Ser Pro Ala Pro Pro Ala Phe Arg Pro Ala Met Ala Ala Val Ala
    1               5                   10                  15
Leu Met Pro Pro Pro Leu Leu Leu Leu Leu Leu Ala Ser Pro Pro
                20                  25                  30
Ala Ala Ser Ala Pro Ser Ala Arg Asp Pro Phe Ala Pro Gln Leu Gly
            35                  40                  45
Asp Thr Gln Asn Cys Gln Leu Arg Cys Arg Asp Arg Asp Leu Gly Pro
        50                  55                  60
Gln Pro Ser Gln Ala Gly Leu Glu Gly Ala Ser Glu Ser Pro Tyr Asp
65                  70                  75                  80
Arg Ala Val Leu Ile Ser Ala Cys Glu Arg Gly Cys Arg Leu Phe Ser
                85                  90                  95
Ile Cys Arg Phe Val Ala Arg Ser Ser Lys Pro Asn Ala Thr Gln Thr
            100                 105                 110
Glu Cys Glu Ala Ala Cys Val Glu Ala Tyr Val Lys Glu Ala Glu Gln
        115                 120                 125
Gln Ala Cys Ser His Gly Cys Trp Ser Gln Pro Ala Glu Pro Glu Pro
    130                 135                 140
Glu Gln Lys Arg Lys Val Leu Glu Ala Pro Ser Gly Ala Leu Ser Leu
145             150                 155                 160
Leu Asp Leu Phe Ser Thr Leu Cys Asn Asp Leu Val Asn Ser Ala Gln
                165                 170                 175
Gly Phe Val Ser Ser Thr Trp Thr Tyr Tyr Leu Gln Thr Asp Asn Gly
            180                 185                 190
Lys Val Val Val Phe Gln Thr Gln Pro Ile Val Glu Ser Leu Gly Phe
        195                 200                 205
Gln Gly Gly Arg Leu Gln Arg Val Glu Val Thr Trp Arg Gly Ser His
210                 215                 220
Pro Glu Ala Leu Glu Val His Val Asp Pro Val Gly Pro Leu Asp Lys
225                 230                 235                 240
```

```
Val Arg Lys Ala Lys Ile Arg Val Lys Thr Ser Ser Lys Ala Lys Val
                245                 250                 255
Glu Ser Glu Glu Pro Gln Asp Asn Asp Phe Leu Ser Cys Met Ser Arg
                260                 265                 270
Arg Ser Gly Leu Pro Arg Trp Ile Leu Ala Cys Cys Leu Phe Leu Ser
                275                 280                 285
Val Leu Val Met Leu Trp Leu Ser Cys Ser Thr Leu Val Thr Ala Pro
        290                 295                 300
Gly Gln His Leu Lys Phe Gln Pro Leu Thr Leu Glu Gln His Lys Gly
305                 310                 315                 320
Phe Met Met Glu Pro Asp Trp Pro Leu Tyr Pro Pro Ser His Ala
                325                 330                 335
Cys Glu Asp Ser Leu Pro Pro Tyr Lys Leu Lys Leu Asp Leu Thr Lys
                340                 345                 350
Leu
353
```

```
        <210> 1298
        <211> 161
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1298
Phe Pro Glu Leu Gly Thr Ser Leu Ser Ala Met Arg Phe Leu Ala Ala
1               5                   10                  15
Thr Phe Leu Leu Leu Ala Leu Ser Thr Ala Ala Gln Ala Glu Pro Val
                20                  25                  30
Gln Phe Lys Asp Cys Gly Ser Val Asp Gly Val Ile Lys Glu Val Asn
            35                  40                  45
Val Ser Pro Cys Pro Thr Gln Pro Cys Gln Leu Ser Lys Gly Gln Ser
        50                  55                  60
Tyr Ser Val Asn Val Thr Phe Thr Ser Asn Ile Gln Ser Lys Ser Ser
65                  70                  75                  80
Lys Ala Val Val His Gly Ile Leu Met Gly Val Pro Val Pro Phe Pro
                85                  90                  95
Ile Pro Glu Pro Asp Gly Cys Lys Ser Gly Ile Asn Cys Pro Ile Gln
            100                 105                 110
Lys Asp Lys Thr Tyr Ser Tyr Leu Asn Lys Leu Pro Val Lys Ser Glu
        115                 120                 125
Tyr Pro Ser Ile Lys Leu Val Val Glu Trp Gln Leu Gln Asp Asp Lys
        130                 135                 140
Asn Gln Ser Leu Phe Cys Trp Glu Ile Pro Val Gln Ile Val Ser His
145                 150                 155                 160
Leu
161
```

```
        <210> 1299
        <211> 128
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1299
Ala Pro Glu Thr Phe Arg Cys Val Trp Arg Leu Gln Gly Leu Thr Phe
1               5                   10                  15
```

```
Ile Ala Phe Thr Glu Leu Gln Ala Lys Val Ile Asp Thr Gln Gln Lys
             20              25              30
Val Lys Leu Ala Asp Ile Gln Ile Glu Gln Leu Asn Arg Thr Lys Lys
         35              40              45
His Ala His Leu Thr Asp Thr Glu Ile Met Thr Leu Val Asp Glu Thr
     50              55              60
Asn Met Tyr Glu Gly Val Gly Arg Met Phe Ile Leu Gln Ser Lys Glu
65              70              75              80
Ala Ile His Ser Gln Leu Leu Glu Lys Gln Lys Ile Ala Glu Glu Lys
             85              90              95
Ile Lys Glu Leu Glu Gln Lys Lys Ser Tyr Leu Glu Arg Ser Val Lys
        100             105             110
Glu Ala Glu Asp Asn Ile Arg Glu Met Leu Met Ala Arg Arg Ala Gln
        115             120             125     128
```

```
<210> 1300
<211> 265
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(265)
<223> X = any amino acid or stop code
```

```
    <400> 1300
His Ser Leu Leu Leu Gly Thr Arg Val Arg Asp Ala Ser Ser Lys Ile
1               5               10              15
Gln Gly Glu Tyr Thr Leu Thr Leu Arg Lys Gly Gly Asn Asn Lys Leu
             20              25              30
Ser Arg Val Phe His Arg Asp Gly His Tyr Gly Phe Ser Glu Pro Leu
         35              40              45
Thr Phe Cys Ser Val Val Asp Leu Ile Asn His Tyr Arg His Glu Ser
     50              55              60
Leu Ala Gln Tyr Asn Ala Lys Leu Asp Thr Arg Leu Leu Tyr Pro Val
65              70              75              80
Ser Lys Tyr Gln Gln Val Arg Ala Gly Leu Gly Ala Arg Glu Gly Ser
             85              90              95
Thr Trp Leu Ala Pro Gly Leu Ser Phe Leu Gly Arg Pro Asp Gln Ala
            100             105             110
Met His Leu Pro Ser Phe Arg His Val Ser Pro Asp Gln Ile Val Lys
            115             120             125
Glu Asp Ser Val Glu Ala Val Gly Ala Gln Leu Lys Val Tyr His Gln
            130             135             140
Gln Tyr Gln Asp Lys Ser Arg Glu Tyr Asp Gln Leu Tyr Glu Glu Tyr
145             150             155             160
Thr Arg Thr Ser Gln Glu Leu Gln Met Lys Arg Thr Ala Ile Glu Ala
             165             170             175
Phe Asn Glu Thr Ile Lys Ile Phe Glu Glu Gln Gly Gln Thr Gln Glu
             180             185             190
Lys Cys Ser Lys Glu Tyr Leu Glu Arg Phe Arg Arg Glu Gly Asn Gln
             195             200             205
Thr Lys Glu Met Gln Arg Ile Leu Leu Asn Ser Glu Arg Leu Lys Ser
210             215             220
Arg Ile Ala Glu Ile His Glu Ser Pro His Arg Ser Trp Glu Gln Gln
225             230             235             240
Leu Leu Val Pro Arg Ala Ser Asp Asn Lys Arg Asp Ile Asp Lys Pro
```

```
                        245                    250                        255
His Xaa Thr Ser Leu Lys Pro Asp Leu
                        260                    265
```

```
        <210> 1301
        <211> 490
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1301
Ala Ala Ala Ala Ala Gly Arg Gly Arg Ser Ser Gly Arg Arg Arg Arg
  1           5                  10                      15
Arg Arg Pro Gly Ala Leu Phe Ala Ser Leu Gly Val Leu Leu Gly Pro
            20                  25                      30
Arg Pro Pro Pro Gly Ile Pro Arg Thr Arg Ala Cys Ser Met Gly Gly
        35                  40                      45
Val Gly Glu Pro Gly Pro Arg Glu Gly Pro Ala Gln Pro Gly Ala Pro
    50                  55                      60
Leu Pro Thr Phe Cys Trp Glu Gln Ile Arg Ala His Asp Gln Pro Gly
65                  70                      75                      80
Asp Lys Trp Leu Val Ile Glu Arg Arg Val Tyr Asp Ile Ser Arg Trp
                85                  90                      95
Ala Gln Arg His Pro Gly Gly Ser Arg Leu Ile Gly His His Gly Ala
            100                 105                     110
Glu Asp Ala Thr Asp Ala Phe Arg Ala Phe His Gln Asp Leu Asn Phe
        115                 120                     125
Val Arg Lys Phe Leu Gln Pro Leu Leu Ile Gly Glu Leu Ala Pro Glu
    130                 135                     140
Glu Pro Ser Gln Asp Gly Pro Leu Asn Ala Gln Leu Val Glu Asp Phe
145                 150                     155                     160
Arg Ala Leu His Gln Ala Ala Glu Asp Met Lys Leu Phe Asp Ala Ser
            165                 170                     175
Pro Thr Phe Phe Ala Phe Leu Leu Gly His Ile Leu Ala Met Glu Val
            180                 185                     190
Leu Ala Trp Leu Leu Ile Tyr Leu Leu Gly Pro Gly Trp Val Pro Ser
    195                 200                     205
Ala Leu Ala Ala Phe Ile Leu Ala Ile Ser Gln Ala Gln Ser Trp Cys
210                 215                     220
Leu Gln His Asp Leu Gly His Ala Ser Ile Phe Lys Lys Ser Trp Trp
225                 230                     235                     240
Asn His Val Ala Gln Lys Phe Val Met Gly Gln Leu Lys Gly Phe Ser
                245                 250                     255
Ala His Trp Trp Asn Phe Arg His Phe Gln His His Ala Lys Pro Asn
            260                 265                     270
Ile Phe His Lys Asp Pro Asp Val Thr Val Ala Pro Val Phe Leu Leu
        275                 280                     285
Gly Glu Ser Ser Val Glu Tyr Gly Lys Lys Lys Arg Arg Tyr Leu Pro
    290                 295                     300
Tyr Asn Gln Gln His Leu Tyr Phe Phe Leu Ile Gly Pro Pro Leu Leu
305                 310                     315                     320
Thr Leu Val Asn Phe Glu Val Glu Asn Leu Ala Tyr Met Leu Val Cys
            325                 330                     335
Met Gln Trp Ala Asp Leu Leu Trp Ala Ala Ser Phe Tyr Ala Arg Phe
            340                 345                     350
Phe Leu Ser Tyr Leu Pro Phe Tyr Gly Val Pro Gly Val Leu Leu Phe
        355                 360                     365
Phe Val Ala Val Arg Val Leu Glu Ser His Trp Phe Val Trp Ile Thr
    370                 375                     380
Gln Met Asn His Ile Pro Lys Glu Ile Gly His Glu Lys His Arg Asp
```

```
         385                          390                          395                          400
Trp Val Ser Ser Gln Leu Ala Ala Thr Cys Asn Val Glu Pro Ser Leu
                     405                      410                      415
Phe Thr Asn Trp Phe Ser Gly His Leu Asn Phe Gln Ile Glu His His
                 420                      425                      430
Leu Phe Pro Arg Met Pro Arg His Asn Tyr Ser Arg Val Ala Pro Leu
             435                      440                      445
Val Lys Ser Leu Cys Ala Lys His Gly Leu Ser Tyr Glu Val Lys Pro
         450                      455                      460
Phe Leu Thr Ala Leu Val Asp Ile Val Arg Ser Leu Lys Lys Ser Gly
465                      470                      475                      480
Asp Ile Trp Leu Asp Ala Tyr Leu His Gln
                     485                      490
```

```
        <210> 1302
        <211> 110
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1302
Lys Ser Arg Ala Thr Arg Leu Arg Glu Ser Ala Glu Met Thr Gly Phe
 1               5                       10                      15
Leu Leu Pro Pro Ala Ser Arg Gly Thr Arg Arg Ser Cys Ser Arg Ser
             20                      25                      30
Arg Lys Arg Gln Thr Arg Arg Arg Asn Pro Ser Ser Phe Val Ala
         35                      40                      45
Ser Cys Pro Thr Leu Leu Pro Phe Ala Cys Val Pro Gly Ala Ser Pro
     50                      55                      60
Thr Thr Leu Ala Phe Pro Pro Val Val Leu Thr Gly Pro Ser Thr Asp
65                      70                      75                      80
Gly Ile Pro Phe Ala Leu Ser Leu Gln Arg Val Pro Phe Val Leu Pro
                 85                      90                      95
Ser Pro Gln Val Ala Ser Leu Pro Leu Gly His Ser Arg Gly
             100                     105                     110
```

```
        <210> 1303
        <211> 138
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1303
Ile Gln Tyr Arg Ser Asp Leu Glu Leu His Ser Ile Thr Met Lys Lys
 1               5                       10                      15
Ser Gly Val Leu Phe Leu Leu Gly Ile Ile Leu Leu Val Leu Ile Gly
             20                      25                      30
Val Gln Gly Thr Pro Val Val Arg Lys Gly Arg Cys Ser Cys Ile Ser
         35                      40                      45
Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp Leu Lys Gln
     50                      55                      60
Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile Ala Thr Leu
65                      70                      75                      80
Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala Asp Val Lys
                 85                      90                      95
Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys Lys Lys Gln
```

```
                100                    105                    110
   Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys Val Arg Lys
           115                    120                    125
   Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr
           130                    135    138
```

```
   <210> 1304
   <211> 1000
   <212>Amino acid
   <213> Homo sapiens
```

```
   <400> 1304
Ile Pro Gly Ser Thr Ile Ser Cys Arg Gly Cys Cys Gly Lys Trp Pro
 1               5                   10                    15
Val Gln Glu Ala Asp Pro Pro Arg Ala Ala Leu Arg Gly Arg Phe Pro
            20                   25                    30
Ala Leu Leu Thr Arg His Cys Pro Ser Pro Arg Ala Glu Lys Glu Lys
        35                    40                    45
Arg Ser Leu Arg Arg Cys Gly Cys Arg Pro Leu Leu Val Glu Leu Ala
    50                    55                    60
Gly Pro Ala Gly Gln Ala Val Glu Val Leu Pro His Phe Glu Ser Leu
65                    70                    75                    80
Gly Lys Gln Glu Lys Ile Pro Asn Lys Met Ser Ala Phe Arg Asn His
            85                    90                    95
Cys Pro His Leu Asp Ser Val Gly Glu Ile Thr Lys Glu Asp Leu Ile
            100                   105                   110
Gln Lys Ser Leu Gly Thr Cys Gln Asp Cys Lys Val Gln Gly Pro Asn
        115                   120                   125
Leu Trp Ala Cys Leu Glu Asn Arg Cys Ser Tyr Val Gly Cys Gly Glu
    130                   135                   140
Ser Gln Val Asp His Ser Thr Ile His Ser Gln Glu Thr Lys His Tyr
145                   150                   155                   160
Leu Thr Val Asn Leu Thr Thr Leu Arg Val Trp Cys Tyr Ala Cys Ser
            165                   170                   175
Lys Glu Val Phe Leu Asp Arg Lys Leu Gly Thr Gln Pro Ser Leu Pro
            180                   185                   190
His Val Arg Gln Pro His Gln Ile Gln Glu Asn Ser Val Gln Asp Phe
        195                   200                   205
Lys Ile Pro Ser Asn Thr Thr Leu Lys Thr Pro Leu Val Ala Val Phe
    210                   215                   220
Asp Asp Leu Asp Ile Glu Ala Asp Glu Glu Asp Glu Leu Arg Ala Arg
225                   230                   235                   240
Gly Leu Thr Gly Leu Lys Asn Ile Gly Asn Thr Cys Tyr Met Asn Ala
            245                   250                   255
Ala Leu Gln Ala Leu Ser Asn Cys Pro Pro Leu Thr Gln Phe Phe Leu
            260                   265                   270
Asp Cys Gly Gly Leu Ala Arg Thr Asp Lys Lys Pro Ala Ile Cys Lys
        275                   280                   285
Ser Tyr Leu Lys Leu Met Thr Glu Leu Trp Tyr Lys Ser Arg Pro Gly
    290                   295                   300
Ser Val Val Pro Thr Thr Leu Phe Gln Gly Ile Lys Thr Val Asn Pro
305                   310                   315                   320
Thr Phe Arg Gly Tyr Ser Gln Gln Asp Ala Gln Glu Phe Leu Arg Cys
            325                   330                   335
Leu Met Asp Leu Leu His Glu Glu Leu Lys Glu Gln Val Met Glu Val
            340                   345                   350
Glu Glu Asp Pro Gln Thr Ile Thr Thr Glu Glu Thr Met Glu Glu Asp
        355                   360                   365
Lys Ser Gln Ser Asp Val Asp Phe Gln Ser Cys Glu Ser Cys Ser Asn
```

```
          370                    375                    380
Ser Asp Arg Ala Glu Asn Glu Asn Gly Ser Arg Cys Phe Ser Glu Asp
385                    390                    395                    400
Asn Asn Glu Thr Thr Met Leu Ile Gln Asp Asp Glu Asn Asn Ser Glu
                    405                    410                    415
Met Ser Lys Asp Trp Gln Lys Glu Lys Met Cys Asn Lys Ile Asn Lys
                420                    425                    430
Val Asn Ser Glu Gly Glu Phe Asp Lys Asp Arg Asp Ser Ile Ser Glu
                435                    440                    445
Thr Val Asp Leu Asn Asn Gln Glu Thr Val Lys Val Gln Ile His Ser
            450                    455                    460
Arg Ala Ser Glu Tyr Ile Thr Asp Val His Ser Asn Asp Leu Ser Thr
465                    470                    475                    480
Pro Gln Ile Leu Pro Ser Asn Glu Gly Val Asn Pro Arg Leu Ser Ala
                    485                    490                    495
Ser Pro Pro Lys Ser Gly Asn Leu Trp Pro Gly Leu Ala Pro Pro His
                500                    505                    510
Lys Lys Ala Gln Ser Ala Ser Pro Lys Arg Lys Lys Gln His Lys Lys
                515                    520                    525
Tyr Arg Ser Val Ile Ser Asp Ile Phe Asp Gly Thr Ile Ile Ser Ser
            530                    535                    540
Val Gln Cys Leu Thr Cys Asp Arg Val Ser Val Thr Leu Glu Thr Phe
545                    550                    555                    560
Gln Asp Leu Ser Leu Pro Ile Pro Gly Lys Glu Asp Leu Ala Lys Leu
                565                    570                    575
His Ser Ser Ser His Pro Thr Ser Ile Val Lys Ala Gly Ser Cys Gly
                580                    585                    590
Glu Ala Tyr Ala Pro Gln Gly Trp Ile Ala Phe Phe Met Glu Tyr Val
            595                    600                    605
Lys Arg Phe Val Val Ser Cys Val Pro Ser Trp Phe Trp Gly Pro Val
        610                    615                    620
Val Thr Leu Gln Asp Cys Leu Ala Ala Phe Phe Ala Arg Asp Glu Leu
625                    630                    635                    640
Lys Gly Asp Asn Met Tyr Ser Cys Glu Lys Cys Lys Lys Leu Arg Asn
                645                    650                    655
Gly Val Lys Phe Cys Lys Val Gln Asn Phe Pro Glu Ile Leu Cys Ile
                660                    665                    670
His Leu Lys Arg Phe Arg His Glu Leu Met Phe Ser Thr Lys Ile Ser
            675                    680                    685
Thr His Val Ser Phe Pro Leu Glu Gly Leu Asp Leu Gln Pro Phe Leu
        690                    695                    700
Ala Lys Asp Ser Pro Ala Gln Ile Val Thr Tyr Asp Leu Leu Ser Val
705                    710                    715                    720
Ile Cys His His Gly Thr Ala Ser Ser Gly His Tyr Ile Ala Tyr Cys
                725                    730                    735
Arg Asn Asn Leu Asn Asn Leu Trp Tyr Glu Phe Asp Asp Gln Ser Val
                740                    745                    750
Thr Glu Val Ser Glu Ser Thr Val Gln Asn Ala Glu Ala Tyr Val Leu
            755                    760                    765
Phe Tyr Arg Lys Ser Ser Glu Glu Ala Gln Lys Glu Arg Arg Arg Ile
        770                    775                    780
Ser Asn Leu Leu Asn Ile Met Glu Pro Ser Leu Leu Gln Phe Tyr Ile
785                    790                    795                    800
Ser Arg Gln Trp Leu Asn Lys Phe Lys Thr Phe Ala Glu Pro Gly Pro
                805                    810                    815
Ile Ser Asn Asn Asp Phe Leu Cys Ile His Gly Gly Val Pro Pro Arg
                820                    825                    830
Lys Ala Gly Tyr Ile Glu Asp Leu Val Leu Met Leu Pro Gln Asn Ile
            835                    840                    845
Trp Asp Asn Leu Tyr Ser Arg Tyr Gly Gly Gly Pro Ala Val Asn His
        850                    855                    860
Leu Tyr Ile Cys His Thr Cys Gln Ile Glu Ala Glu Lys Ile Glu Lys
865                    870                    875                    880
Arg Arg Lys Thr Glu Leu Glu Ile Phe Ile Arg Leu Asn Arg Ala Phe
```

807

```
                         885                      890                      895
         Gln Lys Glu Asp Ser Pro Ala Thr Phe Tyr Cys Ile Ser Met Gln Trp
                     900                      905                      910
         Phe Arg Glu Trp Glu Ser Phe Val Lys Gly Lys Asp Gly Asp Pro Pro
                     915          .           920                      925
         Gly Pro Ile Asp Asn Thr Lys Ile Ala Val Thr Lys Cys Gly Asn Val
                     930                      935    .                 940
         Met Leu Arg Gln Gly Ala Asp Ser Gly Gln Ile Ser Glu Glu Thr Trp
         945                      950                      955                      960
         Asn Phe Leu Gln Ser Ile Tyr Gly Gly Gly Pro Glu Val Ile Leu Arg
                         965                      970                      975
         Pro Pro Val Val His Val Asp Pro Asp Ile Leu Gln Ala Glu Glu Lys
                         980          .           985                     ·990
         Ile Glu Val Glu Thr Arg Ser Leu
                     995                      1000
```

```
         <210> 1305
         <211> 141
         <212>Amino acid
         <213> Homo sapiens
```

```
         <400> 1305
     Ser Pro Ser Ala Ala Gly Gly Leu Ala Trp Val Ser Leu Ala Leu Gly
     1                   5                      10                      15
     Ser Gly Ser Arg Gly Arg Asp His Ser Gly Ser Gly Val Gly Thr Ala·
                     20                      25                      30
     Met Ala Gly Ala Leu Val. Arg Lys Ala Ala Asp Tyr Val Arg Ser Lys
                 35                      40                      45
     Asp Phe Arg Asp Tyr Leu Met Ser Thr His Phe Trp Gly Pro Val Ala
     .       50                      55                      60
     Asn Trp Gly. Leu Pro Ile Ala Ala Ile Asn Asp Met Lys Lys Ser Pro
     65                      70          .           75                      80
     Glu Ile Ile Ser Gly Arg Met Thr Phe Ala Leu Cys Cys Tyr Ser Leu
         .           85                      90                      95
     Thr Phe Met Arg Phe Ala Tyr Lys Val Gln Pro Arg Asn Trp Leu Leu
                     100                     105                     110
     Phe Ala Cys His Ala Thr Asn Glu Val Ala Gln Leu Ile Gln Gly Gly
     .       115                     120                     125
     Arg Leu Ile Lys His Glu Met Thr Lys Thr Ala Ser Ala
         130             .           135                     140 141
```

```
         <210> 1306
         ·<211> 386 ·
         <212>Amino acid
         <213> Homo sapiens
```

```
         <400> 1306
     Leu Gly Ser Arg Gln Ala Ala Gly Thr Met Arg Gly Gln Arg Ser Leu
     1                   5                      10                      15
     Leu Leu Gly Pro Ala Arg Leu Cys Leu Arg Leu Leu Leu Leu Leu Gly
                     20                      25                      30
     Tyr Arg Arg Arg Cys Pro Pro Leu Leu Arg Gly Leu Val Gln Arg Trp
                 35                      40                      45
     Arg Tyr Gly Lys Val Cys Leu Arg Ser Leu Leu Tyr Asn Ser Phe Gly
```

```
                50                        55                        60
Gly Ser Asp Thr Ala Val Asp Ala Ala Phe Glu Pro Val Tyr Trp Leu
65                        70                        75                        80
Val Asp Asn Val Ile Arg Trp Phe Gly Val Val Phe Val Val Leu Val
                        85                        90                        95
Ile Val Leu Thr Gly Ser Ile Val Ala Ile Ala Tyr Leu Cys Val Leu
                100                       105                       110
Pro Leu Ile Leu Arg Thr Tyr Ser Val Pro Arg Leu Cys Trp His Phe
        115                       120                       125
Phe Tyr Ser His Trp Asn Leu Ile Leu Ile Val Phe His Tyr Tyr Gln
        130                       135                       140
Ala Ile Thr Thr Pro Pro Gly Tyr Pro Pro Gln Gly Arg Asn Asp Ile
145                       150                       155                       160
Ala Thr Val Ser Ile Cys Lys Lys Cys Ile Tyr Pro Lys Pro Ala Arg
                165                       170                       175
Thr His His Cys Ser Ile Cys Asn Arg Cys Val Leu Lys Met Asp His
                180                       185                       190
His Cys Pro Trp Leu Asn Asn Cys Val Gly His Tyr Asn His Arg Tyr
        195                       200                       205
Phe Phe Ser Phe Cys Phe Phe Met Thr Leu Gly Cys Val Tyr Cys Ser
        210                       215                       220
Tyr Gly Ser Trp Asp Leu Phe Arg Glu Ala Tyr Ala Ala Ile Glu Lys
225                       230                       235                       240
Met Lys Gln Leu Asp Lys Asn Lys Leu Gln Ala Val Ala Asn Gln Thr
                245                       250                       255
Tyr His Gln Thr Pro Pro Thr Phe Ser Phe Arg Glu Arg Met Thr
                260                       265                       270
His Lys Ser Leu Val Tyr Leu Trp Phe Leu Cys Ser Ser Val Ala Leu
        275                       280                       285
Ala Leu Gly Ala Leu Thr Val Trp His Ala Val Leu Ile Ser Arg Gly
        290                       295                       300
Glu Thr Ser Ile Glu Arg His Ile Asn Lys Lys Glu Arg Arg Arg Leu
305                       310                       315                       320
Gln Ala Lys Gly Arg Val Phe Arg Asn Pro Tyr Asn Tyr Gly Cys Leu
                325                       330                       335
Asp Asn Trp Lys Val Phe Leu Gly Val Asp Thr Gly Arg His Trp Leu
                340                       345                       350
Thr Arg Val Leu Leu Pro Ser Ser His Leu Pro His Gly Asn Gly Met
        355                       360                       365
Ser Trp Glu Pro Pro Pro Trp Val Thr Ala His Ser Ala Ser Val Met
370                       375                       380
Ala Val
385 386


        <210> 1307
        <211> 298
        <212>Amino acid
        <213> Homo sapiens




        <400> 1307
Ala Thr Arg Arg Arg Ala Ala Glu Ala Gly Met Ala Ala Val Leu Gln
1                       5                         10                        15
Arg Val Glu Arg Leu Ser Asn Arg Val Val Arg Val Leu Gly Cys Asn
                20                        25                        30
Pro Gly Pro Met Thr Leu Gln Gly Thr Asn Thr Tyr Leu Val Gly Thr
        35                        40                        45
Gly Pro Arg Arg Ile Leu Ile Asp Thr Gly Glu Pro Ala Ile Pro Glu
        50                        55                        60
Tyr Ile Ser Cys Leu Lys Gln Ala Leu Thr Glu Phe Asn Thr Ala Ile
```

```
 65                       70                      75                      80
Gln Glu Ile Val Val Thr His Trp His Arg Asp His Ser Gly Gly Ile
                    85                      90                      95
Gly Asp Ile Cys Lys Ser Ile Asn Asn Asp Thr Thr Tyr Cys Ile Lys
               100                     105                     110
Lys Leu Pro Arg Asn Pro Gln Arg Glu Glu Ile Ile Gly Asn Gly Glu
           115                     120                     125
Gln Gln Tyr Val Tyr Leu Lys Asp Gly Asp Val Ile Lys Thr Glu Gly
       130                     135                     140
Ala Thr Leu Arg Val Leu Tyr Thr Pro Gly His Thr Asp Asp His Met
145                     150                     155                     160
Ala Leu Leu Leu Glu Glu Glu Asn Ala Ile Phe Ser Gly Asp Cys Ile
               165                     170                     175
Leu Gly Glu Gly Thr Thr Val Phe Glu Asp Leu Tyr Asp Tyr Met Asn
           180                     185                     190
Ser Leu Lys Glu Leu Leu Lys Ile Lys Ala Asp Ile Ile Tyr Pro Gly
       195                     200                     205
His Gly Pro Val Ile His Asn Ala Glu Ala Lys Ile Gln Gln Tyr Ile
   210                     215                     220
Ser His Arg Asn Ile Arg Glu Gln Gln Ile Leu Thr Leu Phe Arg Glu
225                     230                     235                     240
Asn Phe Glu Lys Ser Phe Thr Val Met Glu Leu Val Lys Ile Ile Tyr
               245                     250                     255
Lys Asn Thr Pro Glu Asn Leu His Glu Met Ala Lys His Asn Leu Leu
           260                     265                     270
Leu His Leu Lys Lys Leu Glu Lys Glu Gly Lys Ile Phe Ser Asn Thr
       275                     280                     285
Asp Pro Asp Lys Lys Trp Lys Ala His Leu
   290                     295         298


        <210> 1308
        <211> 306
        <212> Amino acid
        <213> Homo sapiens



        <400> 1308
Glu Leu His Arg Ala Gly Gln Val Ala Gly Gly Ala Arg Arg Ser Arg
 1               5                      10                      15
Arg Glu Ser Met Glu Leu Glu Arg Ile Val Ser Ala Ala Leu Leu Ala
               20                      25                      30
Phe Val Gln Thr His Leu Pro Glu Ala Asp Leu Ser Gly Leu Asp Glu
           35                      40                      45
Val Ile Phe Ser Tyr Val Leu Gly Val Leu Glu Asp Leu Gly Pro Ser
       50                      55                      60
Gly Pro Ser Glu Glu Asn Phe Asp Met Glu Ala Phe Thr Glu Met Met
65                      70                      75                      80
Glu Ala Tyr Val Pro Gly Phe Ala His Ile Pro Arg Gly Thr Ile Gly
               85                      90                      95
Asp Met Met Gln Lys Leu Ser Gly Gln Leu Ser Asp Ala Arg Asn Lys
               100                     105                     110
Glu Asn Leu Gln Pro Gln Ser Ser Gly Val Gln Gly Gln Val Pro Ile
           115                     120                     125
Ser Pro Glu Pro Leu Gln Arg Pro Glu Met Leu Lys Glu Glu Thr Arg
       130                     135                     140
Ser Ser Ala Ala Ala Ala Ala Asp Thr Gln Asp Glu Ala Thr Gly Ala
145                     150                     155                     160
Glu Glu Glu Leu Leu Pro Gly Val Asp Val Leu Leu Glu Val Phe Pro
               165                     170                     175
Thr Cys Ser Val Glu Gln Ala Gln Trp Val Leu Ala Lys Ala Arg Gly
```

810

```
                    180                      185                      190
Asp Leu Glu Glu Ala Val Gln Met Leu Val Glu Gly Lys Glu Glu Gly
        195                      200                      205
Pro Ala Ala Trp Glu Gly Pro Asn Gln Asp Leu Pro Arg Arg Leu Arg
210                      215                      220
Gly Pro Gln Lys Asp Glu Leu Lys Ser Phe Ile Leu Gln Lys Tyr Met
225                      230                      235                      240
Met Val Asp Ser Ala Glu Asp Gln Lys Ile His Arg Pro Met Ala Pro
                245                      250                      255
Lys Glu Ala Pro Lys Lys Leu Ile Arg Tyr Ile Asp Asn Gln Val Val
                260                      265                      270
Ser Thr Lys Gly Glu Arg Phe Lys Asp Val Arg Asn Pro Glu Ala Glu
        275                      280                      285
Glu Met Lys Ala Thr Tyr Ile Asn Leu Lys Pro Ala Arg Lys Tyr Arg
        290                      295                      300
Phe His
305 306
```

```
        <210> 1309
        <211> 174
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1309
Phe Ile Thr Gly Lys Gly Ile Val Ala Ile Leu Arg Cys Leu Gln Phe
1                   5                      10                       15
Asn Glu Thr Leu Thr Glu Leu Arg Phe His Asn Gln Arg His Met Leu
                20                      25                       30
Gly His His Ala Glu Met Glu Ile Ala Arg Leu Leu Lys Ala Asn Asn
        35                       40                       45
Thr Leu Leu Lys Met Gly Tyr His Phe Glu Leu Pro Gly Pro Arg Met
    50                       55                       60
Val Val Thr Asn Leu Leu Thr Arg Asn Gln Asp Lys Gln Arg Gln Lys
65                       70                       75                       80
Arg Gln Glu Glu Gln Lys Gln Gln Gln Leu Lys Glu Gln Lys Lys Leu
                85                          90                       95
Ile Ala Met Leu Glu Asn Gly Leu Gly Leu Pro Pro Gly Met Trp Glu
        100                      105                      110
Leu Leu Gly Gly Pro Lys Pro Asp Ser Arg Met Gln Glu Phe Phe Gln
        115                      120                      125
Pro Pro Pro Pro Arg Pro Pro Asn Pro Gln Asn Val Pro Phe Ser Gln
130                      135                      140
Arg Ser Glu Met Met Lys Lys Pro Ser Gln Ala Pro Lys Tyr Arg Thr
145                      150                      155                      160
Asp Pro Asp Ser Phe Arg Val Val Lys Leu Lys Arg Ile Gln
                165                      170                      174
```

```
        <210> 1310
        <211> 616
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(616)
        <223> X = any amino acid or stop code
```

811

```
      <400> 1310
Gly Gly Arg Ala Gly Thr Gln Cys Cys Trp Arg Ala Gly Ala Arg Leu
 1               5                   10                  15
Arg Gly Ile Ser Pro Ser Pro Ala Leu Pro Glu Ala Pro Gly Leu Cys
            20                  25                  30
Arg Val Arg Ala Gly Leu Gly Ala Gly Ala Leu Gly Arg Ser Pro Ala
        35                  40                  45
Gly Arg Arg Arg Arg Gly Pro Arg Val Ser Ser Ser Pro Ala Pro His
    50                  55                  60
Pro Arg Arg Val Leu Cys Arg Cys Leu Leu Phe Leu Phe Phe Ser Cys
65                  70                  75                  80
His Asp Arg Arg Gly Asp Ser Gln Pro Tyr Gln Ala Leu Lys Tyr Ser
                85                  90                  95
Ser Lys Ser His Pro Ser Ser Gly Asp His Arg His Glu Lys Met Arg
            100                 105                 110
Asp Ala Gly Asp Pro Ser Pro Pro Asn Lys Met Leu Arg Arg Ser Asp
        115                 120                 125
Ser Pro Glu Asn Lys Tyr Ser Asp Ser Thr Gly His Ser Lys Ala Lys
    130                 135                 140
Asn Val His Thr His Arg Val Arg Glu Arg Asp Gly Gly Thr Ser Tyr
145                 150                 155                 160
Ser Pro Gln Glu Asn Ser His Asn His Ser Ala Leu His Ser Ser Asn
                165                 170                 175
Phe Thr Phe Phe Leu Ile Pro Ser Asn Xaa Pro Gln Gly Lys Thr Phe
            180                 185                 190
Arg Ile Ala Pro Tyr Asp Ser Ala Asp Asp Trp Ser Leu Glu His Ile
        195                 200                 205
Ser Ser Ser Gly Glu Lys Tyr Tyr Tyr Asn Cys Arg Thr Glu Val Ser
    210                 215                 220
Gln Trp Gly Lys Thr Pro Lys Ser Gly Leu Glu Arg Gly Gln Arg Gln
225                 230                 235                 240
Lys Glu Ala Asn Lys Met Ala Val Asn Ser Phe Pro Lys Asp Arg Asp
                245                 250                 255
Tyr Arg Arg Glu Val Met Gln Ala Thr Ala Thr Ser Gly Phe Ala Ser
            260                 265                 270
Gly Lys Ser Thr Ser Gly Asp Lys Pro Val Ser His Ser Cys Thr Thr
        275                 280                 285
Pro Ser Thr Ser Ser Ala Ser Gly Leu Asn Pro Thr Ser Ala Pro Pro
    290                 295                 300
Thr Ser Ala Ser Ala Val Pro Val Ser Pro Val Pro Gln Ser Pro Ile
305                 310                 315                 320
Pro Pro Leu Leu Gln Asp Pro Asn Leu Leu Arg Gln Leu Leu Pro Ala
            325                 330                 335
Leu Glu Ala Thr Leu Gln Leu Asn Asn Ser Asn Val Asp Ile Ser Ile
        340                 345                 350
Ile Asn Glu Val Leu Thr Gly Asp Val Thr Gln Ala Ser Leu Gln Thr
    355                 360                 365
Ile Ile His Lys Cys Leu Thr Ala Gly Pro Ser Val Phe Lys Ile Thr
    370                 375                 380
Ser Leu Ile Ser Gln Ala Ala Gln Leu Ser Thr Gln Ala Gln Ala Ser
385                 390                 395                 400
Asn Gln Ser Pro Met Ser Leu Thr Ser Asp Ala Ser Ser Pro Arg Ser
                405                 410                 415
Tyr Val Ser Pro Arg Asn Lys Ala His Leu Lys Leu Asn Thr Val Pro
            420                 425                 430
Ile Gln Thr Phe Gly Phe Ser Thr Pro Pro Val Ser Ser Gln Pro Lys
        435                 440                 445
Val Ser Thr Pro Val Val Lys Gln Gly Pro Val Ser Gln Ser Ala Thr
    450                 455                 460
Gln Gln Pro Val Thr Ala Asp Lys Gln Gln Gly His Glu Pro Val Ser
465                 470                 475                 480
```

```
Pro Arg Ser Leu Gln Arg Ser Ser Ser Gln Arg Ser Pro Ser Pro Gly
            485             490             495
Pro Asn His Thr Ser Asn Ser Ser Asn Ala Ser Asn Ala Thr Val Val
            500             505             510
Pro Gln Asn Ser Ser Ala Arg Ser Thr Cys Ser Leu Thr Pro Ala Leu
            515             520             525
Ala Ala His Phe Ser Glu Asn Leu Ile Lys His Val Gln Gly Trp Pro
        530             535             540
Ala Asp His Ala Glu Lys Gln Ala Ser Arg Leu Arg Glu Glu Ala His
    545             550             555             560
Asn Met Gly Thr Ile His Met Ser Glu Ile Cys Thr Glu Leu Lys Asn
            565             570             575
Leu Arg Ser Leu Val Arg Val Cys Glu Ile Gln Ala Thr Leu Arg Glu
            580             585             590
Gln Arg Ile Leu Phe Leu Arg Gln Gln Ile Lys Glu Leu Glu Lys Leu
            595             600             605
Lys Asn Gln Asn Ser Phe Met Val
    610             615 616
```

```
<210> 1311
<211> 387
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1311
Val Ala Pro Glu Cys Arg Gly Ala Tyr Pro Phe Arg Ala Met Met Pro
  1           5             10              15
Gly Thr Ala Leu Lys Ala Val Leu Leu Ala Val Leu Leu Val Gly Leu
            20              25              30
Gln Thr Ala Thr Gly Arg Leu Leu Ser Gly Gln Pro Val Cys Arg Gly
        35              40              45
Gly Thr Gln Arg Pro Cys Tyr Lys Val Ile Tyr Phe His Asp Thr Ser
    50              55              60
Arg Arg Leu Asn Phe Glu Glu Ala Lys Glu Ala Cys Arg Arg Asp Gly
65              70              75              80
Gly Gln Leu Val Ser Ile Glu Ser Glu Asp Glu Gln Lys Leu Ile Glu
            85              90              95
Lys Phe Ile Glu Asn Leu Leu Pro Ser Asp Gly Asp Phe Trp Ile Gly
            100             105             110
Leu Arg Arg Arg Glu Glu Lys Gln Ser Asn Ser Thr Ala Cys Gln Asp
            115             120             125
Leu Tyr Ala Trp Thr Asp Gly Ser Ile Ser Gln Phe Arg Asn Trp Tyr
    130             135             140
Val Asp Glu Pro Ser Cys Gly Ser Glu Val Cys Val Val Met Tyr His
145             150             155             160
Gln Pro Ser Ala Pro Ala Gly Ile Gly Gly Pro Tyr Met Phe Gln Trp
            165             170             175
Asn Asp Asp Arg Cys Asn Met Lys Asn Asn Phe Ile Cys Lys Tyr Ser
            180             185             190
Asp Glu Lys Pro Ala Val Pro Ser Arg Glu Ala Glu Gly Glu Glu Thr
            195             200             205
Glu Leu Thr Thr Pro Val Leu Pro Glu Glu Thr Gln Glu Glu Asp Ala
    210             215             220
Lys Lys Thr Phe Lys Glu Ser Arg Glu Ala Ala Leu Asn Leu Ala Tyr
225             230             235             240
Ile Leu Ile Pro Ser Ile Pro Leu Leu Leu Leu Leu Val Val Thr Thr
            245             250             255
Val Val Cys Trp Val Trp Ile Cys Arg Lys Arg Lys Arg Glu Gln Pro
            260             265             270
```

```
Asp Pro Ser Thr Lys Lys Gln His Thr Ile Trp Pro Ser Pro His Gln
        275                 280                 285
Gly Asn Ser Pro Asp Leu Glu Val Tyr Asn Val Ile Arg Lys Gln Ser
    290                 295                 300
Glu Ala Asp Leu Ala Glu Thr Arg Pro Asp Leu Lys Asn Ile Ser Phe
305                 310                 315                 320
Arg Val Cys Ser Gly Glu Ala Thr Pro Asp Asp Met Ser Cys Asp Tyr
            325                 330                 335
Asp Asn Met Ala Val Asn Pro Ser Glu Ser Gly Phe Val Thr Leu Val
            340                 345                 350
Ser Val Glu Ser Gly Phe Val Thr Asn Asp Ile Tyr Glu Phe Ser Pro
    355                 360                 365
Asp Gln Met Gly Arg Ser Lys Glu Ser Gly Trp Val Glu Asn Glu Ile
    370                 375                 380
Tyr Gly Tyr
385     387
```

```
<210> 1312
<211> 470
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1312
Thr Glu Trp Gly Leu Ser Gly Ser Cys Pro Gly Cys Ser Pro Leu Glu
1                   5                   10                  15
Pro Gly Ser Arg Gly Arg Gly Ala Ala Ala Trp Arg Ile Leu Arg Cys
            20                  25                  30
Arg Arg Leu Pro Glu Pro Ser Pro Phe Leu Thr Gln Pro Asn Leu Ala
        35                  40                  45
Gln Ser Gln Pro Pro Ala Pro Val Pro Val Thr Asp Pro Ser Val Thr
    50                  55                  60
Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser Leu
65                  70                  75                  80
Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu Ile Thr
                85                  90                  95
Ser Leu Asp Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn Ala Asp Val
            100                 105                 110
Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe Ser Gln Met Leu
        115                 120                 125
His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile Lys Glu Glu Phe Pro
    130                 135                 140
Asn Glu Asn Gln Val Val Phe Ala Arg Val Asp Cys Asp Gln His Ser
145                 150                 155                 160
Asp Ile Ala Gln Arg Tyr Arg Ile Ser Lys Tyr Pro Thr Leu Lys Leu
                165                 170                 175
Phe Arg Asn Gly Met Met Met Lys Arg Glu Tyr Arg Gly Gln Arg Ser
            180                 185                 190
Val Lys Ala Leu Ala Asp Tyr Ile Arg Gln Gln Lys Ser Asp Pro Ile
        195                 200                 205
Gln Glu Ile Arg Asp Leu Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys
    210                 215                 220
Arg Asn Ile Ile Gly Tyr Phe Glu Gln Lys Asp Ser Asp Asn Tyr Arg
225                 230                 235                 240
Val Phe Glu Arg Val Ala Asn Ile Leu His Asp Asp Cys Ala Phe Leu
                245                 250                 255
Ser Ala Phe Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn
            260                 265                 270
Ile Ile Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu
        275                 280                 285
```

```
Gly Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys
290                 295                 300
Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu Leu
305                 310                 315                 320
Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys Glu Asp
                325                 330                 335
Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg Gln Leu Ile
                340                 345                 350
Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp Cys Asp Lys Phe
                355                 360                 365
Arg His Pro Leu Leu His Ile Gln Lys Thr Pro Ala Asp Cys Pro Val
370                 375                 380
Ile Ala Ile Asp Ser Phe Arg His Met Tyr Val Phe Gly Asp Phe Lys
385                 390                 395                 400
Asp Val Leu Ile Pro Gly Lys Leu Lys Gln Phe Val Phe Asp Leu His
                405                 410                 415
Ser Gly Lys Leu His Arg Glu Phe His His Gly Pro Asp Pro Thr Asp
                420                 425                 430
Thr Ala Pro Gly Glu Gln Ala Gln Asp Val Ala Ser Ser Pro Pro Glu
                435                 440                 445
Ser Ser Phe Gln Lys Leu Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu
450                 455                 460
Arg Asp Arg Asp Glu Leu
465                 470


        <210> 1313
        <211> 262
        <212>Amino acid
        <213> Homo sapiens




        <400> 1313
Leu Thr Pro Ser Val Gly Pro Val Phe Pro Gly Arg Pro Thr Arg Pro
1                   5                   10                  15
Leu Ala Ser Pro Phe Pro Val Pro Leu His Arg Cys Ser Ala Gly Ser
                20                  25                  30
Gln Pro Pro Gly Pro Val Pro Glu Gly Leu Ile Arg Ile Tyr Ser Met
        35                  40                  45
Arg Phe Cys Pro Tyr Ser His Arg Thr Arg Leu Val Leu Lys Ala Lys
        50                  55                  60
Asp Ile Arg His Glu Val Val Asn Ile Asn Leu Arg Asn Lys Pro Glu
65                  70                  75                  80
Trp Tyr Tyr Thr Lys His Pro Phe Gly His Ile Pro Val Leu Glu Thr
                85                  90                  95
Ser Gln Cys Gln Leu Ile Tyr Glu Ser Val Ile Ala Cys Glu Tyr Leu
                100                 105                 110
Asp Asp Ala Tyr Pro Gly Arg Lys Leu Phe Pro Tyr Asp Pro Tyr Glu
        115                 120                 125
Arg Ala Arg Gln Lys Met Leu Leu Glu Leu Phe Cys Lys Val Pro His
        130                 135                 140
Leu Thr Lys Glu Cys Leu Val Ala Leu Arg Cys Gly Arg Glu Cys Thr
145                 150                 155                 160
Asn Leu Lys Ala Ala Leu Arg Gln Glu Phe Ser Asn Leu Glu Glu Ile
                165                 170                 175
Leu Glu Tyr Gln Asn Thr Thr Phe Phe Gly Gly Thr Cys Ile Ser Met
                180                 185                 190
Ile Asp Tyr Leu Leu Trp Pro Trp Phe Glu Arg Leu Asp Val Tyr Gly
                195                 200                 205
Ile Leu Asp Cys Val Ser His Thr Pro Ala Leu Arg Leu Trp Ile Ser
        210                 215                 220
```

```
Ala Met Lys Trp Asp Pro Thr Val Cys Ala Leu Leu Met Asp Lys Ser
225                     230                 235                 240
Ile Phe Gln Gly Phe Leu Asn Leu Tyr Phe Gln Asn Asn Pro Asn Ala
                245                 250                 255
Phe Asp Phe Gly Leu Cys
                260     262
```

```
<210> 1314
<211> 173
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1314
Asn Thr Ala Thr Asn Met Thr Gln Pro Asn Ala Gly Thr Arg Lys Tyr
1               5                   10                  15
Ser Val Pro Ala Ile Ser Val His Thr Ser Ser Ser Ser Phe Ala Tyr
            20                  25                  30
Asp Arg Glu Phe Leu Arg Thr Leu Pro Gly Phe Leu Ile Val Ala Glu
        35                  40                  45
Ile Val Leu Gly Leu Leu Val Trp Thr Leu Ile Ala Gly Thr Glu Tyr
    50                  55                  60
Phe Arg Val Pro Ala Phe Gly Trp Val Met Phe Val Ala Val Phe Tyr
65                  70                  75                  80
Trp Val Leu Thr Val Phe Phe Leu Ile Ile Tyr Ile Thr Met Thr Tyr
            85                  90                  95
Thr Arg Ile Pro Gln Val Pro Trp Thr Thr Val Gly Leu Cys Phe Asn
            100                 105                 110
Gly Ser Ala Phe Val Leu Tyr Leu Ser Ala Ala Val Val Asp Ala Ser
        115                 120                 125
Ser Val Ser Pro Glu Arg Asp Ser His Asn Phe Asn Ser Trp Ala Ala
    130                 135                 140
Ser Ser Phe Phe Ala Phe Leu Val Thr Ile Cys Tyr Ala Gly Asn Thr
145                 150                 155                 160
Tyr Phe Ser Phe Ile Ala Trp Arg Ser Arg Thr Ile Gln
                165                 170     173
```

```
<210> 1315
<211> 259
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1315
Gly Leu Arg Asp Pro Phe Arg Arg Lys Arg Arg Leu Lys Pro Gln Val
1               5                   10                  15
Lys Met Ser Asn Tyr Val Asn Asp Met Trp Pro Gly Ser Pro Gln Glu
            20                  25                  30
Lys Asp Ser Pro Ser Thr Ser Arg Ser Gly Gly Ser Ser Arg Leu Ser
        35                  40                  45
Ser Arg Ser Arg Ser Arg Ser Phe Ser Arg Ser Ser Arg Ser His Ser
    50                  55                  60
Arg Val Ser Ser Arg Phe Ser Ser Arg Ser Arg Arg Ser Lys Ser Arg
65                  70                  75                  80
Ser Arg Ser Arg Arg Arg His Gln Arg Lys Tyr Arg Arg Tyr Ser Arg
                85                  90                  95
```

```
Ser Tyr Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Arg Tyr Arg Glu
            100             105             110
Arg Arg Tyr·Gly Phe Thr Arg Arg Tyr Tyr Arg Ser Pro Ser Arg Tyr
            115             120             125
Arg Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Gly Arg Ser Tyr Cys
    130             135             140
Gly Arg Ala Tyr Ala Ile Ala Arg Gly Gln Arg Tyr Tyr Gly Phe Gly
145             150             155             160
Arg Thr Val Tyr Pro Glu Glu His Ser Arg Trp Arg Asp Arg Ser Arg
            165             170             175
Thr Arg Ser Arg Ser Arg Thr Pro Phe Arg Leu Ser Glu Lys Asp Arg
            180             185             190
Met Glu Leu Leu Glu Ile Ala Lys Thr Asn Ala Ala Lys Ala Leu Gly
            195             200             205
Thr Thr Asn Ile Asp Leu Pro Ala Ser Leu Arg Thr Val Pro Ser Ala
    210             215             220
Lys Glu Thr Ser Arg Gly Ile Gly Val Ser Ser Asn Gly Ala Lys Pro
225             230             235             240
Glu Val Ser Ile Leu Gly Leu Ser Glu Gln Asn Phe Gln Lys Ala Asn
            245             250             255
Cys Gln Ile
    259
```

```
    <210> 1316
    <211> 678
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1316
Ala Glu Gly Ser Thr Met Asp Leu Thr Lys Met Gly Met Ile Gln Leu
 1             5              10              15
Gln Asn Pro Asn His Pro Thr Gly Leu Leu Cys Lys Ala Asn Gln Met
            20              25              30
Arg Leu Ala Gly Thr Leu Cys Asp Val Val Ile Met Val Asp Ser Gln
    35              40              45
Glu Phe His Ala His Arg Thr Val Leu Ala Cys Thr Ser Lys Met Phe
    50              55              60
Glu Ile Leu Phe His Arg Asn Ser Gln His Tyr Thr Leu Asp Phe Leu
65              70              75              80
Ser Pro.Lys Thr Phe Gln Gln Ile Leu Glu Tyr Ala Tyr Thr Ala Thr
            85              90              95
Leu Gln Ala Lys Ala Glu Asp Leu Asp Asp Leu Leu Tyr Ala Ala Glu
            100             105             110
Ile Leu Glu Ile Glu Tyr Leu Glu Glu Gln Cys Leu Lys Met Leu Glu
            115             120             125
Thr Ile Gln Ala Ser Asp Asp Asn Asp Thr Glu Ala Thr Met Ala Asp
    130             135             140
Gly Gly Ala Glu Glu Lys Lys Asp Arg Lys Ala Arg Tyr Leu Lys Asn
145             150             155             160
Ile Phe Ile Ser Lys His Ser Ser Glu Glu Ser Gly Tyr Ala Ser Val
            165             170             175
Ala Gly Gln Ser Leu Pro Gly Pro Met Val Asp Gln Ser Pro Ser Val
            180             185             190
Ser Thr Ser Phe Gly Leu Ser Ala Met Ser Pro Thr Lys Ala Ala Val
            195             200             205
Asp Ser Leu Met Thr Ile Gly Gln Ser Leu Leu Gln Gly Thr Leu Gln
    210             215             220
Pro·Pro Ala Gly Pro Glu Glu Pro Thr Leu Ala Gly Gly Gly Arg His
225             230             235             240
```

```
Pro Gly Val Ala Glu Val Lys Thr Glu Met Met Gln Val Asp Glu Val
                245                 250                 255
Pro Ser Gln Asp Ser Pro Gly Ala Ala Glu Ser Ser Ile Ser Gly Gly
            260                 265                 270
Met Gly Asp Lys Val Glu Glu Arg Gly Lys Glu Gly Pro Gly Thr Pro
        275                 280                 285
Thr Arg Ser Ser Val Ile Thr Ser Ala Arg Glu Leu His Tyr Gly Arg
    290                 295                 300
Glu Glu Ser Ala Glu Gln Val Pro Pro Pro Ala Glu Ala Gly Gln Ala
305                 310                 315                 320
Pro Thr Gly Arg Pro Glu His Pro Ala Pro Pro Glu Lys His Leu
            325                 330                 335
Gly Ile Tyr Ser Val Leu Pro Asn His Lys Ala Asp Ala Val Leu Ser
        340                 345                 350
Met Pro Ser Ser Val Thr Ser Gly Leu His Val Gln Pro Ala Leu Ala
        355                 360                 365
Val Ser Met Asp Phe Ser Thr Tyr Gly Gly Leu Leu Pro Gln Gly Phe
    370                 375                 380
Ile Gln Arg Glu Leu Phe Ser Lys Leu Gly Glu Leu Ala Val Gly Met
385                 390                 395                 400
Lys Ser Glu Ser Arg Thr Ile Gly Glu Gln Cys Ser Val Cys Gly Val
            405                 410                 415
Glu Leu Pro Asp Asn Glu Ala Val Glu Gln His Arg Lys Leu His Ser
        420                 425                 430
Gly Met Lys Thr Tyr Gly Cys Glu Leu Cys Gly Lys Arg Phe Leu Asp
        435                 440                 445
Ser Leu Arg Leu Arg Met His Leu Leu Ala His Ser Ala Gly Ala Lys
    450                 455                 460
Ala Phe Val Cys Asp Gln Cys Gly Ala Gln Phe Ser Lys Glu Asp Ala
465                 470                 475                 480
Leu Glu Thr His Arg Gln Thr His Thr Gly Thr Asp Met Ala Val Phe
            485                 490                 495
Cys Leu Leu Cys Gly Lys Arg Phe Gln Ala Gln Ser Ala Leu Gln Gln
            500                 505                 510
His Met Glu Val His Ala Gly Val Arg Ser Tyr Ile Cys Ser Glu Cys
    515                 520                 525
Asn Arg Thr Phe Pro Ser His Thr Ala Leu Lys Arg His Leu Arg Ser
    530                 535                 540
His Thr Gly Asp His Pro Tyr Glu Cys Glu Phe Cys Gly Ser Cys Phe
545                 550                 555                 560
Arg Asp Glu Ser Thr Leu Lys Ser His Lys Arg Ile His Thr Gly Glu
            565                 570                 575
Lys Pro Tyr Glu Cys Asn Gly Cys Gly Lys Lys Phe Ser Leu Lys His
        580                 585                 590
Gln Leu Glu Thr His Tyr Arg Val His Thr Gly Glu Lys Pro Phe Glu
    595                 600                 605
Cys Lys Leu Cys His Gln Arg Ser Arg Asp Tyr Ser Ala Met Ile Lys
    610                 615                 620
His Leu Arg Thr His Asn Gly Ala Ser Pro Tyr Gln Cys Thr Ile Cys
625                 630                 635                 640
Thr Glu Tyr Cys Pro Ser Leu Ser Ser Met Gln Lys His Met Lys Gly
            645                 650                 655
His Lys Pro Glu Glu Ile Pro Pro Asp Trp Arg Ile Glu Lys Thr Tyr
            660                 665                 670
Leu Tyr Leu Cys Tyr Val
        675                 678
```

<210> 1317
<211> 74
<212> Amino acid
<213> Homo sapiens

<400> 1317

```
Ile Trp Glu Ala Pro Thr Leu Ile Phe Thr Leu Ala Gly Gly Arg Ala
1               5                   10                  15
Leu Gly His Pro Pro Met Gln Lys Gly Ser Gln Gly Cys Ala Leu Pro
            20                  25                  30
His Pro Leu Pro Gly Ala Ser Leu Pro Ala Gln Pro Gly Pro Ala Asp
          35                  40                  45
His Arg Gly Trp Glu Cys Arg Ile Gly Gly Glu Ala Ser Val Phe Thr
      50                  55                  60
His Leu Phe Cys Leu Pro His Ser Pro Thr
65                  70                  74
```

<210> 1318
<211> 351
<212>Amino acid
<213> Homo sapiens

<400> 1318

```
Ala Ser Gly Ser Pro Ala Pro Ser Ser Ser Ser Ala Met Ala Ala Ala
1               5                   10                  15
Cys Gly Pro Gly Ala Ala Gly Tyr Cys Leu Leu Leu Gly Leu His Leu
            20                  25                  30
Phe Leu Leu Thr Ala Gly Pro Ala Leu Gly Trp Asn Asp Pro Asp Arg
          35                  40                  45
Met Leu Leu Arg Asp Val Lys Ala Leu Thr Leu His Tyr Asp Arg Tyr
      50                  55                  60
Thr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln Leu Lys Cys Val Gly
65                  70                  75                  80
Gly Thr Ala Gly Cys Asp Ser Tyr Thr Pro Lys Val Ile Gln Cys Gln
                85                  90                  95
Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp Glu Cys Lys Thr Asp
              100                 105                 110
Leu Asp Ile Ala Tyr Lys Phe Gly Lys Thr Val Val Ser Cys Glu Gly
          115                 120                 125
Tyr Glu Ser Ser Glu Asp Gln Tyr Val Leu Arg Gly Ser Cys Gly Leu
      130                 135                 140
Glu Tyr Asn Leu Asp Tyr Thr Glu Leu Gly Leu Gln Lys Leu Lys Glu
145                 150                 155                 160
Ser Gly Lys Gln His Gly Phe Ala Ser Phe Ser Asp Tyr Tyr Tyr Lys
                165                 170                 175
Trp Ser Ser Ala Asp Ser Cys Asn Met Ser Gly Leu Ile Thr Ile Val
              180                 185                 190
Val Leu Leu Gly Ile Ala Phe Val Val Tyr Lys Leu Phe Leu Ser Asp
          195                 200                 205
Gly Gln Tyr Ser Pro Pro Pro Tyr Ser Glu Tyr Pro Pro Phe Ser His
      210                 215                 220
Arg Tyr Gln Arg Phe Thr Asn Ser Ala Gly Pro Pro Pro Pro Gly Phe
225                 230                 235                 240
Lys Ser Glu Phe Thr Gly Pro Gln Asn Thr Gly His Gly Ala Thr Ser
                245                 250                 255
Gly Phe Gly Ser Ala Phe Thr Gly Gln Gln Gly Tyr Glu Asn Ser Gly
                260                 265                 270
Pro Gly Phe Trp Thr Gly Leu Gly Thr Gly Gly Ile Leu Gly Tyr Leu
          275                 280                 285
Phe Gly Ser Asn Arg Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr Tyr
          290                 295                 300
```

Pro Ser Tyr Pro Pro Ser Tyr Pro Gly Thr Trp Asn Arg Ala Tyr Ser
305   310   315   320
Pro Leu His Gly Gly Ser Gly Ser Tyr Ser Val Cys Ser Asn Ser Asp
                325   330   335
Thr Lys Thr Arg Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg
                340   345   350 351

<210> 1319
<211> 310
<212>Amino acid
<213> Homo sapiens

<400> 1319
Gly Arg Cys Gly Ala Met Ala Ala Gly Leu Ala Arg Leu Leu Leu Leu
1   5   10   15
Leu Gly Leu Ser Ala Gly Gly Pro Ala Pro Ala Gly Ala Ala Lys Met
            20   25   30
Lys Val Val Glu Glu Pro Asn Ala Phe Gly Val Asn Asn Pro Phe Leu
            35   40   45
Pro Gln Ala Ser Arg Leu Gln Ala Lys Arg Asp Pro Ser Pro Val Ser
        50   55   60
Gly Pro Val His Leu Phe Arg Leu Ser Gly Lys Cys Phe Ser Leu Val
65   70   75   80
Glu Ser Thr Tyr Lys Tyr Glu Phe Cys Pro Phe His Asn Val Thr Gln
                85   90   95
His Glu Gln Thr Phe Arg Trp Asn Ala Tyr Ser Gly Ile Leu Gly Ile
            100   105   110
Trp His Glu Trp Glu Ile Ala Asn Asn Thr Phe Thr Gly Met Trp Met
            115   120   125
Arg Asp Gly Asp Ala Cys Arg Ser Arg Ser Arg Gln Ser Lys Val Glu
130   135   140
Leu Ala Cys Gly Lys Ser Asn Arg Leu Ala His Val Ser Glu Pro Ser
145   150   155   160
Thr Cys Val Tyr Ala Leu Thr Phe Glu Thr Pro Leu Val Cys His Pro
                165   170   175
His Ala Leu Leu Val Tyr Pro Thr Leu Pro Glu Ala Leu Gln Arg Gln
            180   185   190
Trp Asp Gln Val Glu Gln Asp Leu Ala Asp Glu Leu Ile Thr Pro Gln
            195   200   205
Gly His Glu Lys Leu Leu Arg Thr Leu Phe Glu Asp Ala Gly Tyr Leu
        210   215   220
Lys Thr Pro Glu Glu Asn Glu Pro Thr Gln Leu Glu Gly Gly Pro Asp
225   230   235   240
Ser Leu Gly Phe Glu Thr Leu Glu Asn Cys Arg Lys Ala His Lys Glu
                245   250   255
Leu Ser Lys Glu Ile Lys Arg Leu Lys Gly Leu Leu Thr Gln His Gly
            260   265   270
Ile Pro Tyr Thr Arg Pro Thr Glu Thr Ser Asn Leu Glu His Leu Gly
        275   280   285
His Glu Thr Pro Arg Ala Lys Ser Pro Glu Gln Leu Arg Gly Asp Pro
290   295   300
Gly Leu Arg Gly Ser Leu
305   310

<210> 1320
<211> 313
<212>Amino acid
<213> Homo sapiens

```
     <400> 1320
Asn Ser Phe Trp Ser Val Leu Phe Leu Val Gln Glu Glu Thr Glu Val
 1               5                  10                  15
Ala Arg Cys Asn Ala Gln His Arg Leu Arg Gln Ser Arg Asp Ser Lys
            20                  25                  30
Pro Asp Pro Ser Phe Arg Ser Gln Pro Ile Asp Ser Ser Ile Ser Phe
            35                  40                  45
Ala Gly Ser Asp Ile Gln Pro Leu Phe Ser Phe Ala Ser Val Asp Gly
    50                  55                  60
Thr Gln Val Gly Glu Ala Glu Glu Trp Ala Gly Pro Trp Ala Glu Ala
65                  70                  75                  80
Thr Leu Leu Pro Gly Pro Gly Asn Arg Trp Pro Pro Arg Ala Gly Leu
                85                  90                  95
Ser Gly Asn Trp Leu Glu Glu Asp Gly Asp Trp Pro Ser Leu Pro Glu
                100                 105                 110
Val Val Gly Phe Val Ser Glu Arg Glu Leu Phe Arg Asp Ala Leu Gly
    115                 120                 125
Ala Gly Cys Arg Ile Leu Leu Ile Cys Glu Met Gln Leu Thr His Gln
    130                 135                 140
Leu Asp Leu Phe Pro Glu Cys Arg Val Thr Leu Leu Leu Phe Lys Asp
145                 150                 155                 160
Val Lys Asn Ala Gly Asp Leu Arg Arg Lys Ala Met Glu Gly Thr Ile
                165                 170                 175
Asp Gly Ser Leu Ile Asn Pro Thr Val Ile Val Asp Pro Phe Gln Ile
                180                 185                 190
Leu Val Ala Ala Asn Lys Ala Val His Leu Tyr Lys Leu Gly Lys Met
                195                 200                 205
Lys Thr Arg Thr Leu Ser Thr Glu Ile Ile Phe Asn Leu Ser Pro Asn
    210                 215                 220
Asn Asn Ile Ser Glu Ala Leu Lys Lys Phe Gly Ile Ser Ala Asn Asp
225                 230                 235                 240
Thr Ser Ile Leu Ile Val Tyr Ile Glu Glu Gly Glu Lys Gln Ile Asn
                245                 250                 255
Gln Glu Tyr Leu Ile Ser Gln Val Glu Gly His Gln Val Ser Leu Lys
            260                 265                 270
Asn Leu Pro Glu Ile Met Asn Ile Thr Glu Val Lys Lys Ile Tyr Lys
            275                 280                 285
Leu Ser Ser Gln Glu Glu Ser Ile Gly Thr Leu Leu Asp Ala Ile Ile
    290                 295                 300
Cys Arg Met Ser Thr Lys Asp Val Leu
305                 310         313


     <210> 1321
     <211> 891
     <212>Amino acid
     <213> Homo sapiens




     <400> 1321
Gln Arg Ser Trp Ala Gly Pro Gly Ala Gly Pro Glu Ala Gly Thr Arg
 1               5                  10                  15
Pro Pro Ala Arg Gly Arg Arg Arg Gln Pro Gly Asn Val Asp Pro Arg
            20                  25                  30
Arg Arg Ala Pro Gln Leu Arg Ser Gln Met Gln Val Ala Met Ala Arg
            35                  40                  45
```

Ala Thr Thr Ala Thr Gly Asn Arg Leu Trp Pro Gly Leu Leu Ile Met
        50   55   60

Leu Gly Ser Leu Cys His Arg Gly Ser Pro Cys Gly Leu Ser Thr His
 65   70   75   80

Ile Glu Ile Gly His Arg Ala Leu Glu Phe Leu Gln Leu His Asn Gly
                85   90   95

Arg Val Asn Tyr Arg Glu Leu Leu Leu Glu His Gln Asp Ala Tyr Gln
            100   105   110

Ala Gly Ile Val Phe Pro Asp Cys Phe Tyr Pro Ser Ile Cys Lys Gly
        115   120   125

Gly Lys Phe His Asp Val Ser Glu Ser Thr His Trp Thr Pro Phe Leu
        130   135   140

Asn Ala Ser Val His Tyr Ile Arg Glu Asn Tyr Pro Leu Pro Trp Glu
145   150   155   160

Lys Asp Thr Glu Lys Leu Val Ala Phe Leu Phe Gly Ile Thr Ser His
                165   170   175

Met Ala Ala Asp Val Ser Trp His Ser Leu Gly Leu Glu Gln Gly Phe
            180   185   190

Leu Arg Thr Met Gly Ala Ile Asp Phe His Gly Ser Tyr Ser Glu Ala
        195   200   205

His Ser Ala Gly Asp Phe Gly Gly Asp Val Leu Ser Gln Phe Glu Phe
        210   215   220

Asn Phe Asn Tyr Leu Ala Arg Arg Trp Tyr Val Pro Val Lys Asp Leu
225   230   235   240

Leu Gly Ile Tyr Glu Lys Leu Tyr Gly Arg Lys Val Ile Thr Glu Asn
                245   250   255

Val Ile Val Asp Cys Ser His Ile Gln Phe Leu Glu Met Tyr Gly Glu
            260   265   270

Met Leu Ala Val Ser Lys Leu Tyr Pro Thr Tyr Ser Thr Lys Ser Pro
        275   280   285

Phe Leu Val Glu Gln Phe Gln Glu Tyr Phe Leu Gly Gly Leu Asp Asp
    290   295   300

Met Ala Phe Trp Ser Thr Asn Ile Tyr His Leu Thr Ile Phe Met Leu
305   310   315   320

Glu Asn Gly Thr Ser Asp Cys Asn Leu Pro Glu Asn Pro Leu Phe Ile
                325   330   335

Ala Cys Gly Gly Gln Gln Asn His Thr Gln Gly Ser Lys Met Gln Lys
        340   345   350

Asn Asp Phe His Arg Asn Leu Thr Thr Ser Leu Thr Glu Ser Val Asp
        355   360   365

Arg Asn Ile Asn Tyr Thr Glu Arg Gly Val Phe Phe Ser Val Asn Ser
    370   375   380

Trp Thr Pro Asp Ser Met Ser Phe Ile Tyr Lys Ala Leu Glu Arg Asn
385   390   395   400

Ile Arg Thr Met Phe Ile Gly Gly Ser Gln Leu Ser Gln Lys His Val
            405   410   415

Ser Ser Pro Leu Ala Ser Tyr Phe Leu Ser Phe Pro Tyr Ala Arg Leu
        420   425   430

Gly Trp Ala Met Thr Ser Ala Asp Leu Asn Gln Asp Gly His Gly Asp
        435   440   445

Leu Val Val Gly Ala Pro Gly Tyr Ser Arg Pro Gly His Ile His Ile
    450   455   460

Gly Arg Val Tyr Leu Ile Tyr Gly Asn Asp Leu Gly Leu Pro Pro Val
465   470   475   480

Asp Leu Asp Leu Asp Lys Glu Ala His Arg Ile Leu Glu Gly Phe Gln
                485   490   495

Pro Ser Gly Arg Phe Gly Ser Ala Leu Ala Val Leu Asp Phe Asn Val
        500   505   510

Asp Gly Val Pro Asp Leu Ala Val Gly Ala Pro Ser Val Gly Ser Glu
        515   520   525

Gln Leu Thr Tyr Lys Gly Ala Val Tyr Val Tyr Phe Gly Ser Lys Gln
    530   535   540

Gly Gly Met Ser Ser Ser Pro Asn Ile Thr Ile Ser Cys Gln Asp Ile
545   550   555   560

822

```
Tyr Cys Asn Leu Gly Trp Thr Leu Leu Ala Ala Asp Val Asn Gly Asp
                565                 570                 575
Ser Glu Pro Asp Leu Val Ile Gly Ser Pro Phe Ala Pro Gly Gly Gly
            580                 585                 590
Lys Gln Lys Gly Ile Val Ala Ala Phe Tyr Ser Gly Pro Ser Leu Ser
        595                 600                 605
Asp Lys Glu Lys Leu Asn Val Glu Ala Ala Asn Trp Thr Val Arg Gly
    610                 615                 620
Glu Glu Asp Phe Ser Trp Phe Gly Tyr Ser Leu His Gly Val Thr Val
625                 630                 635                 640
Asp Asn Arg Thr Leu Leu Leu Val Gly Ser Pro Thr Trp Lys Asn Ala
                645                 650                 655
Ser Arg Leu Gly His Leu Leu His Ile Arg Asp Glu Lys Lys Ser Leu
                660                 665                 670
Gly Arg Val Tyr Gly Tyr Phe Pro Pro Asn Gly Gln Ser Trp Phe Thr
        675                 680                 685
Ile Ser Gly Asp Lys Ala Met Gly Lys Leu Gly Thr Ser Leu Ser Ser
    690                 695                 700
Gly His Val Leu Met Asn Gly Thr Leu Lys Gln Val Leu Leu Val Gly
705                 710                 715                 720
Ala Pro Thr Tyr Asp Asp Val Ser Lys Val Ala Phe Leu Thr Val Thr
                725                 730                 735
Leu His Gln Gly Gly Ala Thr Arg Met Tyr Ala Leu Thr Ser Asp Ala
                740                 745                 750
Gln Pro Leu Leu Leu Ser Thr Phe Ser Gly Asp Arg Arg Phe Ser Arg
        755                 760                 765
Phe Gly Gly Val Leu His Leu Ser Asp Leu Asp Asp Asp Gly Leu Asp
    770                 775                 780
Glu Ile Ile Met Ala Ala Pro Leu Arg Ile Ala Asp Val Thr Ser Gly
785                 790                 795                 800
Leu Ile Gly Gly Glu Asp Gly Arg Val Tyr Val Tyr Asn Gly Lys Glu
                805                 810                 815
Thr Thr Leu Gly Asp Met Thr Gly Lys Cys Lys Ser Trp Ile Thr Pro
            820                 825                 830
Cys Pro Glu Glu Lys Ala Gln Tyr Val Leu Ile Ser Pro Glu Ala Ser
        835                 840                 845
Ser Arg Phe Gly Ser Ser Leu Ile Thr Val Arg Ser Lys Ala Lys Asn
    850                 855                 860
Gln Val Val Ile Ala Ala Gly Arg Ser Ser Leu Gly Ala Arg Leu Ser
865                 870                 875                 880
Gly Ala Leu His Val Tyr Ser Leu Gly Ser Asp
                885                 890 891
```

```
<210> 1322
<211> 119
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1322
Ser Leu Arg Asn Ser Ala Arg Gly Leu Lys Met Ala Ala Ser Ala Ala
1               5                   10                  15
Arg Gly Ala Ala Ala Leu Arg Arg Ser Ile Asn Gln Pro Val Ala Phe
            20                  25                  30
Val Arg Arg Ile Pro Trp Thr Ala Ala Ser Ser Gln Leu Lys Glu His
        35                  40                  45
Phe Ala Gln Phe Gly His Val Arg Arg Cys Ile Leu Pro Phe Asp Lys
    50                  55                  60
Glu Thr Gly Phe His Arg Gly Leu Gly Trp Val Gln Phe Ser Ser Glu
65                  70                  75                  80
```

```
Glu Gly Leu Arg Asn Ala Leu Gln Gln Glu Asn His Ile Ile Asp Gly
                  85                  90                  95
Val Lys Val Gln Val His Thr Arg Arg Pro Lys Leu Pro Gln Thr Ser
                 100                 105                 110
Asp Asp Glu Lys Lys Asp Phe
                 115             119
```

```
        <210> 1323
        <211> 257
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1323
Gly Ser Ser Asn Ile His Ser Ala Ser Thr His Gly Phe Cys His Trp
  1               5                  10                  15
Phe Ser Ser Pro Ser Thr Leu Lys Arg Gln Lys Gln Ala Ile Arg Phe
                  20                  25                  30
Gln Lys Ile Arg Arg Gln Met Glu Ala Pro Gly Ala Pro Pro Arg Thr
             35                  40                  45
Leu Thr Trp Glu Ala Met Glu Gln Ile Arg Tyr Leu His Glu Glu Phe
         50                  55                  60
Pro Glu Ser Trp Ser Val Pro Arg Leu Ala Glu Gly Phe Asp Val Ser
 65                  70                  75                  80
Thr Asp Val Ile Arg Arg Val Leu Lys Ser Lys Phe Leu Pro Thr Leu
                  85                  90                  95
Glu Gln Lys Leu Lys Gln Asp Gln Lys Val Leu Lys Lys Ala Gly Leu
                 100                 105                 110
Ala His Ser Leu Gln His Leu Arg Gly Ser Gly Asn Thr Ser Lys Leu
             115                 120                 125
Leu Pro Ala Gly His Ser Val Ser Gly Ser Leu Leu Met Pro Gly His
         130                 135                 140
Glu Ala Ser Ser Lys Asp Pro Asn His Ser Thr Ala Leu Lys Val Ile
145                 150                 155                 160
Glu Ser Asp Thr His Arg Thr Asn Thr Pro Arg Arg Arg Lys Gly Arg
                 165                 170                 175
Asn Lys Glu Ile Gln Asp Leu Glu Glu Ser Phe Val Pro Val Ala Ala
             180                 185                 190
Pro Leu Gly His Pro Arg Glu Leu Gln Lys Tyr Ser Ser Asp Ser Glu
         195                 200                 205
Ser Pro Arg Gly Thr Gly Ser Gly Ala Leu Pro Ser Gly Gln Lys Leu
210                 215                 220
Glu Glu Leu Lys Ala Glu Glu Pro Asp Asn Phe Ser Ser Lys Val Val
225                 230                 235                 240
Gln Arg Gly Arg Glu Phe Phe Asp Ser Asn Gly Asn Phe Leu Tyr Arg
                 245                 250                 255
Ile
257
```

```
        <210> 1324
        <211> 273
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1324
```

```
Glu Thr Arg Val Lys Thr Ser Leu Glu Leu Leu Arg Thr Gln Leu Glu
1               5                   10                  15
Pro Thr Gly Thr Val Gly Asn Thr Ile Met Thr Ser Gln Pro Val Pro
            20                  25                  30
Asn Glu Thr Ile Ile Val Leu Pro Ser Asn Val Ile Asn Phe Ser Gln
            35                  40                  45
Ala Glu Lys Pro Glu Pro Thr Asn Gln Gly Gln Asp Ser Leu Lys Lys
    50                  55                  60
His Leu His Ala Glu Ile Lys Val Ile Gly Thr Ile Gln Ile Leu Cys
65                  70                  75                  80
Gly Met Met Val Leu Ser Leu Gly Ile Ile Leu Ala Ser Ala Ser Phe
            85                  90                  95
Ser Pro Asn Phe Thr Gln Val Thr Ser Thr Leu Leu Asn Ser Ala Tyr
            100                 105                 110
Pro Phe Ile Gly Pro Phe Phe Phe Ile Ile Ser Gly Ser Leu Ser Ile
            115                 120                 125
Ala Thr Glu Lys Arg Leu Thr Lys Leu Leu Val His Ser Ser Leu Val
    130                 135                 140
Gly Ser Ile Leu Ser Ala Leu Ser Ala Leu Val Gly Phe Ile Ile Leu
145                 150                 155                 160
Ser Val Lys Gln Ala Thr Leu Asn Pro Ala Ser Leu Gln Cys Glu Leu
            165                 170                 175
Asp Lys Asn Asn Ile Pro Thr Arg Ser Tyr Val Ser Tyr Phe Tyr His
            180                 185                 190
Asp Ser Leu Tyr Thr Thr Asp Cys Tyr Thr Ala Lys Ala Ser Leu Ala
    195                 200                 205
Gly Thr Leu Ser Leu Met Leu Ile Cys Thr Leu Leu Glu Phe Cys Leu
    210                 215                 220
Ala Val Leu Thr Ala Val Leu Arg Trp Lys Gln Ala Tyr Ser Asp Phe
225                 230                 235                 240
Pro Gly Ser Val Leu Phe Leu Pro His Ser Tyr Ile Gly Asn Ser Gly
            245                 250                 255
Met Ser Ser Lys Met Thr His Asp Cys Gly Tyr Glu Glu Leu Leu Thr
            260                 265                 270
Ser
273
```

```
        <210> 1325
        <211> 477
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1325
Glu Met Val Gly Ala Met Trp Lys Val Ile Val Ser Leu Val Leu Leu
1               5                   10                  15
Met Pro Gly Pro Cys Asp Gly Leu Phe Arg Ser Leu Tyr Arg Ser Val
            20                  25                  30
Ser Met Pro Pro Lys Gly Asp Ser Gly Gln Pro Leu Phe Leu Thr Pro
            35                  40                  45
Tyr Ile Glu Ala Gly Lys Ile Gln Lys Gly Arg Glu Leu Ser Leu Val
    50                  55                  60
Gly Pro Phe Pro Gly Leu Asn Met Lys Ser Tyr Ala Gly Phe Leu Thr
65                  70                  75                  80
Val Asn Lys Thr Tyr Asn Ser Asn Leu Phe Phe Trp Phe Phe Pro Ala
            85                  90                  95
Gln Ile Gln Pro Glu Asp Ala Pro Val Val Leu Trp Leu Gln Gly Gly
            100                 105                 110
Pro Gly Gly Ser Ser Met Phe Gly Leu Phe Val Glu His Gly Pro Tyr
            115                 120                 125
```

Val Val Thr Ser Asn Met Thr Leu Arg Asp Arg Asp Phe Pro Trp Thr
130   135   140
Thr Thr Leu Ser Met Leu Tyr Ile Asp Asn Pro Val Gly Thr Gly Phe
145   150   155   160
Ser Phe Thr Asp Asp Thr His Gly Tyr Ala Val Asn Glu Asp Asp Val
                165   170   175
Ala Arg Asp Leu Tyr Ser Ala Leu Ile Gln Phe Phe Gln Ile Phe Pro
            180   185   190
Glu Tyr Lys Asn Asn Asp Phe Tyr Val Thr Gly Glu Ser Tyr Ala Gly
            195   200   205
Lys Tyr Val Pro Ala Ile Ala His Leu Ile His Ser Leu Asn Pro Val
        210   215   220
Arg Glu Val Lys Ile Asn Leu Asn Gly Ile Ala Ile Gly Asp Gly Tyr
225   230   235   240
Ser Asp Pro Glu Ser Ile Ile Gly Gly Tyr Ala Glu Phe Leu Tyr Gln
            245   250   255
Ile Gly Leu Leu Asp Glu Lys Gln Lys Lys Tyr Phe Gln Lys Gln Cys
            260   265   270
His Glu Cys Ile Glu His Ile Arg Lys Gln Asn Trp Phe Glu Ala Phe
            275   280   285
Glu Ile Leu Asp Lys Leu Leu Asp Gly Asp Leu Thr Ser Asp Pro Ser
    290   295   300
Tyr Phe Gln Asn Val Thr Gly Cys Ser Asn Tyr Tyr Asn Phe Leu Arg
305   310   315   320
Cys Thr Glu Pro Glu Asp Gln Leu Tyr Tyr Val Lys Phe Leu Ser Leu
            325   330   335
Pro Glu Val Arg Gln Ala Ile His Val Gly Asn Gln Thr Phe Asn Asp
            340   345   350
Gly Thr Ile Val Glu Lys Tyr Leu Arg Glu Asp Thr Val Gln Ser Val
            355   360   365
Lys Pro Trp Leu Thr Glu Ile Met Asn Asn Tyr Lys Val Leu Ile Tyr
        370   375   380
Asn Gly Gln Leu Asp Ile Ile Val Ala Ala Ala Leu Thr Glu Arg Ser
385   390   395   400
Leu Met Gly Met Asp Trp Lys Gly Ser Gln Glu Tyr Lys Lys Ala Glu
                405   410   415
Lys Lys Val Trp Lys Ile Phe Lys Ser Asp Ser Glu Val Ala Gly Tyr
            420   425   430
Ile Arg Gln Ala Gly Asp Phe His Gln Val Ile Ile Arg Gly Gly Gly
        435   440   445
His Ile Leu Pro Tyr Asp Gln Pro Leu Arg Ala Phe Asp Met Ile Asn
    450   455   460
Arg Phe Ile Tyr Gly Lys Gly Trp Asp Pro Tyr Val Gly
465   470   475   477

        <210> 1326
        <211> 160
        <212> Amino acid
        <213> Homo sapiens

        <400> 1326
Arg Asp Glu Arg Ala Lys Val Pro Phe Arg Ser Thr Glu Gly Gly Arg
    1   5   10   15
Arg Arg Arg Arg Arg Met Glu Ala Val Val Phe Val Phe Ser Leu Leu
                20   25   30
Asp Cys Cys Ala Leu Ile Phe Leu Ser Val Tyr Phe Ile Ile Thr Leu
            35   40   45
Ser Asp Leu Glu Cys Asp Tyr Ile Asn Ala Arg Ser Cys Cys Ser Lys
    50   55   60

```
Leu Asn Lys Trp Val Ile Pro Glu Leu Ile Gly His Thr Ile Val Thr
 65                  70                  75                  80
Val Leu Leu Leu Met Ser Leu His Trp Phe Ile Phe Leu Leu Asn Leu
             85                  90                  95
Pro Val Ala Thr Trp Asn Ile Tyr Arg Tyr Ile Met Val Pro Ser Gly
        100                 105                 110
Asn Met Gly Val Phe Asp Pro Thr Glu Ile His Asn Arg Gly Gln Leu
        115                 120                 125
Lys Ser His Met Lys Glu Ala Met Ile Lys Leu Gly Phe His Leu Leu
    130                 135                 140
Cys Phe Phe Met Tyr Leu Tyr Ser Met Ile Leu Ala Leu Ile Asn Asp
145                 150                 155                 160
```

```
<210> 1327
<211> 131
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1327
Gln Ser Pro Gly His Gly Ala Pro Cys Gln Leu Ser Ser Ser His Ser
 1               5                  10                  15
Arg Ser Asn Arg Leu Leu Ser Pro Met Ala Arg Ala Thr Leu Ser Ala
            20                  25                  30
Ala Pro Ser Asn Pro Arg Leu Leu Arg Val Ala Leu Leu Leu Leu Leu
        35                  40                  45
Leu Val Ala Ala Ser Arg Arg Ala Ala Gly Ala Pro Leu Ala Thr Glu
    50                  55                  60
Leu Arg Cys Gln Cys Leu Gln Thr Leu Gln Gly Ile His Leu Lys Asn
65                  70                  75                  80
Ile Gln Ser Val Lys Val Lys Ser Pro Gly Pro His Cys Ala Gln Thr
            85                  90                  95
Glu Val Ile Ala Thr Leu Lys Asn Gly Gln Lys Ala Cys Leu Asn Pro
        100                 105                 110
Ala Ser Pro Met Val Lys Lys Ile Ile Glu Lys Met Leu Lys Asn Gly
        115                 120                 125
Lys Ser Asn
    130 131
```

```
<210> 1328
<211> 44
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1328
His Pro Leu Ser Leu Val Phe Leu Ala Leu Asn Thr Gly Lys Glu Lys
 1               5                  10                  15
Ser His Pro Gly Gly Gly Glu Arg Pro Gly Leu Ala Gly Gln Gly
            20                  25                  30
Glu Pro Asp His Pro Ala Gly Ala Arg Asp Gly Arg
        35                  40                  44
```

```
<210> 1329
<211> 525
<212> Amino acid
<213> Homo sapiens


<400> 1329
Cys Thr Pro Val Ala Arg Ser Met Ala Thr Thr Ala Thr Cys Thr Arg
 1               5                  10                  15
Phe Thr Asp Asp Tyr Gln Leu Phe Glu Glu Leu Gly Lys Gly Ala Phe
            20                  25                  30
Ser Val Val Arg Arg Cys Val Lys Lys Thr Ser Thr Gln Glu Tyr Ala
        35                  40                  45
Ala Lys Ile Ile Asn Thr Lys Lys Leu Ser Ala Arg Asp His Gln Lys
    50                  55                  60
Leu Glu Arg Glu Ala Arg Ile Cys Arg Leu Leu Lys His Pro Asn Ile
65                  70                  75                  80
Val Arg Leu His Asp Ser Ile Ser Glu Glu Gly Phe His Tyr Leu Val
                85                  90                  95
Phe Asp Leu Val Thr Gly Gly Glu Leu Phe Glu Asp Ile Val Ala Arg
            100                 105                 110
Glu Tyr Tyr Ser Glu Ala Asp Ala Ser His Cys Ile His Gln Ile Leu
        115                 120                 125
Glu Ser Val Asn His Ile His Gln His Asp Ile Val His Arg Asp Leu
    130                 135                 140
Lys Pro Glu Asn Leu Leu Leu Ala Ser Lys Cys Lys Gly Ala Ala Val
145                 150                 155                 160
Lys Leu Ala Asp Phe Gly Leu Ala Ile Glu Val Gln Gly Glu Gln Gln
                165                 170                 175
Ala Trp Phe Gly Phe Ala Gly Thr Pro Gly Tyr Leu Ser Pro Glu Val
            180                 185                 190
Leu Arg Lys Asp Pro Tyr Gly Lys Pro Val Asp Ile Trp Ala Cys Gly
        195                 200                 205
Val Ile Leu Tyr Ile Leu Leu Val Gly Tyr Pro Pro Phe Trp Asp Glu
    210                 215                 220
Asp Gln His Lys Leu Tyr Gln Gln Ile Lys Ala Gly Ala Tyr Asp Phe
225                 230                 235                 240
Pro Ser Pro Glu Trp Asp Thr Val Thr Pro Glu Ala Lys Asn Leu Ile
                245                 250                 255
Asn Gln Met Leu Thr Ile Asn Pro Ala Lys Arg Ile Thr Ala Asp Gln
            260                 265                 270
Ala Leu Lys His Pro Trp Val Cys Gln Arg Ser Thr Val Ala Ser Met
        275                 280                 285
Met His Arg Gln Glu Thr Val Glu Cys Leu Arg Lys Phe Asn Ala Arg
    290                 295                 300
Arg Lys Leu Lys Gly Ala Ile Leu Thr Thr Met Leu Val Ser Arg Asn
305                 310                 315                 320
Phe Ser Ala Ala Lys Ser Leu Leu Asn Lys Lys Ser Asp Gly Gly Val
                325                 330                 335
Lys Pro Gln Ser Asn Asn Lys Asn Ser Leu Val Ser Pro Ala Gln Glu
            340                 345                 350
Pro Ala Pro Leu Gln Thr Ala Met Glu Pro Gln Thr Thr Val Val His
        355                 360                 365
Asn Ala Thr Asp Gly Ile Lys Gly Ser Thr Glu Ser Cys Asn Thr Thr
    370                 375                 380
Thr Glu Asp Glu Asp Leu Lys Val Arg Lys Gln Glu Ile Ile Lys Ile
385                 390                 395                 400
Thr Glu Gln Leu Ile Glu Ala Ile Asn Asn Gly Asp Phe Glu Ala Tyr
                405                 410                 415
Thr Lys Ile Cys Asp Pro Gly Leu Thr Ser Phe Glu Pro Glu Ala Leu
            420                 425                 430
```

Gly Asn Leu Val Glu Gly Met Asp Phe His Lys Phe Tyr Phe Glu Asn
        435   440   445
Leu Leu Ser Lys Asn Ser Lys Pro Ile His Thr Thr Ile Leu Asn Pro
        450   455   460
His Val His Val Ile Gly Glu Asp Ala Ala Cys Ile Ala Tyr Ile Arg
465   470   475   480
Leu Thr Gln Tyr Ile Asp Gly Gln Gly Arg Pro Arg Thr Ser Gln Ser
                485   490   495
Glu Glu Thr Arg Val Trp His Arg Arg Asp Gly Lys Trp Leu Asn Val
        500   505   510
His Tyr His Cys Ser Gly Ala Pro Ala Ala Pro Leu Gln
        515   520   525

        <210> 1330
        <211> 205
        <212>Amino acid
        <213> Homo sapiens

        <400> 1330
Asn Arg Arg Thr Val Lys Met Leu Leu Glu Leu Ser Glu Glu His Lys
  1   5   10   15
Glu His Leu Ala Phe Leu Pro Gln Val Asp Ser Ala Val Val Ala Glu
        20   25   30
Phe Gly Arg Ile Ala Val Glu Phe Leu Arg Arg Gly Ala Asn Pro Lys
        35   40   45
Ile Tyr Glu Gly Ala Ala Arg Lys Leu Asn Val Ser Ser Asp Thr Val
    50   55   60
Gln His Gly Val Glu Gly Leu Thr Tyr Leu Leu Thr Glu Ser Ser Lys
  65   70   75   80
Leu Met Ile Ser Glu Leu Asp Phe Gln Asp Ser Val Phe Val Leu Gly
                85   90   95
Phe Ser Glu Glu Leu Asn Lys Leu Leu Leu Gln Leu Tyr Leu Asp Asn
        100   105   110
Arg Lys Glu Ile Arg Thr Ile Leu Ser Glu Leu Ala Pro Ser Leu Pro
        115   120   125
Ser Tyr His Asn Leu Glu Trp Arg Leu Asp Val Gln Leu Ala Ser Arg
    130   135   140
Ser Leu Arg Gln Gln Ile Lys Pro Ala Val Thr Ile Lys Leu His Leu
145   150   155   160
Asn Gln Asn Gly Asp His Asn Thr Lys Val Leu Gln Thr Asp Pro Ala
                165   170   175
Thr Leu Leu His Leu Val Gln Gln Leu Glu Gln Ala Leu Glu Glu Met
                180   185   190
Lys Thr Asn His Cys Arg Arg Val Val Arg Asn Ile Lys
        195   200   205

        <210> 1331
        <211> 78
        <212>Amino acid
        <213> Homo sapiens

        <400> 1331
Gly Thr Ser Ile Tyr Leu Ala His Arg Val Ala Arg Ala Trp Glu Leu
  1   5   10   15

```
Ala Gln Phe Ile His His Thr Ser Lys Lys Ala Asp Val Val Leu Ala
            20                    25                    30
Cys Gly Asp Ser Ile Val His Pro Glu Asp Leu Ile Cys Cys Pro Leu
            35                    40                    45
Thr Gly Arg Ser Cys Leu Cys Asp Val His Leu Leu Ser Ser Leu Leu
            50                    55                    60
Ala Arg Leu Gly Arg Gly Tyr Ala Val Ser Leu Thr Asn Leu
65                      70                    75          78
```

```
        <210> 1332
        <211> 274
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1332
Arg Gly Cys Gly Ser Cys Gly Tyr Lys Pro Ser Ala Gly Pro Ala Trp
1               5               10                    15
Arg Pro Arg Pro Pro Pro Ala Val Ser Pro Leu Arg His Pro Glu Pro
            20                    25                    30
Ala Lys Val Leu Ser Phe Ser Ser Cys Pro Leu Pro Ala Leu Gly Arg
            35                    40                    45
Thr Gly Pro Ser Arg Ala Ala Arg Ala Gln Ser Leu Thr Met Ala Ser
    50                    55                    60
Leu Phe Lys Lys Lys Thr Val Asp Asp Val Ile Lys Glu Gln Asn Arg
65                    70                    75                    80
Glu Leu Arg Gly Thr Gln Arg Ala Ile Ile Arg Asp Arg Ala Ala Leu
                85                    90                    95
Glu Lys Gln Glu Lys Gln Leu Glu Leu Glu Ile Lys Lys Met Ala Lys
            100                   105                   110
Ile Gly Asn Lys Glu Ala Cys Lys Val Leu Ala Lys Gln Leu Val His
            115                   120                   125
Leu Arg Lys Gln Lys Thr Arg Thr Phe Ala Val Ser Ser Lys Val Thr
    130                   135                   140
Ser Met Ser Thr Gln Thr Lys Val Met Asn Ser Gln Met Lys Met Ala
145                   150                   155                   160
Gly Ala Met Ser Thr Thr Ala Lys Thr Met Gln Ala Val Asn Lys Lys
                165                   170                   175
Met Asp Pro Gln Lys Thr Leu Gln Thr Met Gln Asn Phe Gln Lys Glu
            180                   185                   190
Asn Met Lys Met Glu Met Thr Glu Glu Met Ile Asn Asp Thr Leu Asp
            195                   200                   205
Asp Ile Phe Asp Gly Ser Asp Asp Glu Glu Glu Ser Gln Asp Ile Val
    210                   215                   220
Asn Gln Val Leu Asp Glu Ile Gly Ile Glu Ile Ser Gly Lys Met Ala
225                   230                   235                   240
Lys Ala Pro Ser Ala Ala Arg Ser Leu Pro Ser Ala Ser Thr Ser Lys
                245                   250                   255
Ala Thr Ile Ser Asp Glu Glu Ile Glu Arg Gln Leu Lys Ala Leu Gly
            260                   265                   270
Val Asp
274
```

```
        <210> 1333
        <211> 157
        <212>Amino acid
        <213> Homo sapiens
```

```
      <400> 1333
Ser Thr Asp Gly Asn Gly Ala Glu Arg Leu Phe Ala Glu Leu Arg Lys
1               5                   10                  15
Met Asn Ala Arg Gly Leu Gly Ser Glu Leu Lys Asp Ser Ile Pro Val
            20                  25                  30
Thr Glu Leu Ser Ala Ser Gly Pro Phe Glu Ser His Asp Leu Leu Arg
        35                  40                  45
Lys Gly Phe Ser Cys Val Lys Asn Glu Leu Leu Pro Ser His Pro Leu
    50                  55                  60
Glu Leu Ser Glu Lys Asn Phe Gln Leu Asn Gln Asp Lys Met Asn Phe
65                  70                  75                  80
Ser Thr Leu Arg Asn Ile Gln Gly Leu Phe Ala Pro Leu Lys Leu Gln
            85                  90                  95
Met Glu Phe Lys Ala Val Gln Gln Val Gln Arg Leu Pro Phe Leu Ser
            100                 105                 110
Ser Ser Asn Leu Ser Leu Asp Val Leu Arg Gly Asn Asp Glu Thr Ile
        115                 120                 125
Gly Phe Glu Asp Ile Leu Asn Asp Pro Ser Gln Ser Glu Val Met Gly
    130                 135                 140
Glu Pro His Leu Met Val Glu Tyr Lys Leu Gly Leu Leu
145                 150                 155     157


      <210> 1334
      <211> 193
      <212>Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(193)
      <223> X = any amino acid or stop code


      <400> 1334
Arg Asn Met Lys Leu His Tyr Val Ala Val Leu Thr Leu Ala Ile Leu
1                5                   10                  15
Met Phe Leu Thr Trp Leu Pro Glu Ser Leu Ser Cys Asn Lys Ala Leu
            20                  25                  30
Cys Ala Ser Asp Val Ser Lys Cys Leu Ile Gln Glu Leu Cys Gln Cys
        35                  40                  45
Arg Pro Gly Glu Gly Asn Cys Ser Cys Cys Lys Glu Cys Met Leu Cys
    50                  55                  60
Leu Gly Ala Leu Trp Asp Glu Cys Cys Asp Cys Val Gly Met Cys Asn
65                  70                  75                  80
Pro Arg Asn Tyr Ser Asp Thr Pro Thr Ser Lys Ser Thr Val Glu
            85                  90                  95
Glu Leu His Glu Pro Ile Pro Ser Leu Phe Arg Ala Leu Thr Glu Gly
            100                 105                 110
Asp Thr Gln Leu Asn Trp Asn Ile Val Ser Phe Pro Val Ala Glu Glu
        115                 120                 125
Leu Ser His His Glu Asn Leu Val Ser Phe Leu Glu Thr Val Asn Gln
    130                 135                 140
Pro His His Gln Asn Val Ser Val Pro Ser Asn Asn Val His Ala Pro
145                 150                 155                 160
Tyr Ser Ser Asp Lys Glu Xaa Leu Pro Thr Val Asp Phe Phe His Ser
            165                 170                 175
Ala Pro Ser Cys Gly Leu Ser Met Xaa Ser Ile Ile Phe Phe Glu Glu
```

                    180   185   190
Thr
193

        <210> 1335
        <211> 179
        <212> Amino acid
        <213> Homo sapiens

        <400> 1335
Val Gly Gly Val Pro Thr Trp Leu Glu Gly Cys Gly Ser Gly Asn Pro
1   5   10   15
Ser Pro Arg Ser Gly Gly Gly Pro Gly Ala Arg Leu Thr Leu Pro Ala
            20   25   30
Leu Gln Met Thr Val His Asn Leu Tyr Leu Phe Asp Arg Asn Gly Val
        35   40   45
Cys Leu His Tyr Ser Glu Trp His Arg Lys Lys Gln Ala Gly Ile Pro
    50   55   60
Lys Glu Glu Glu Tyr Lys Leu Met Tyr Gly Met Leu Phe Ser Ile Arg
65   70   75   80
Ser Phe Val Ser Lys Met Ser Pro Leu Asp Met Lys Asp Gly Phe Leu
                85   90   95
Ala Phe Gln Thr Ser Arg Tyr Lys Leu His Tyr Tyr Glu Thr Pro Thr
            100   105   110
Gly Ile Lys Val Val Met Asn Thr Asp Leu Gly Val Gly Pro Ile Arg
        115   120   125
Asp Val Leu His His Ile Tyr Ser Ala Leu Tyr Val Glu Leu Val Val
    130   135   140
Lys Asn Pro Leu Cys Pro Leu Gly Gln Thr Val Gln Ser Glu Leu Phe
145   150   155   160
Arg Ser Arg Leu Asp Ser Tyr Val Arg Ser Leu Pro Phe Phe Ser Ala
                165   170   175
Arg Ala Gly
        179

        <210> 1336
        <211> 236
        <212> Amino acid
        <213> Homo sapiens

        <400> 1336
Pro Gly Leu Ser Gln Glu Pro Ser Gly Ser Met Glu Thr Val Val Ile
1   5   10   15
Val Ala Ile Gly Val Leu Ala Thr Ile Phe Leu Ala Ser Phe Ala Ala
            20   25   30
Leu Val Leu Val Cys Arg Gln Arg Tyr Cys Arg Pro Arg Asp Leu Leu
        35   40   45
Gln Arg Tyr Asp Ser Lys Pro Ile Val Asp Leu Ile Gly Ala Met Glu
    50   55   60
Thr Gln Ser Glu Pro Ser Glu Leu Glu Leu Asp Asp Val Val Ile Thr
65   70   75   80
Asn Pro His Ile Glu Ala Ile Leu Glu Asn Glu Asp Trp Ile Glu Asp
                85   90   95
Ala Ser Gly Leu Met Ser His Cys Ile Ala Ile Leu Lys Ile Cys His

                                    832

```
                    100                   105                   110
Thr Leu Thr Glu Lys Leu Val Ala Met Thr Met Gly Ser Gly Ala Lys
        115                   120                   125
Met Lys Thr Ser Ala Ser Val Ser Asp Ile Ile Val Val Ala Lys Arg
    130                   135                   140
Ile Ser Pro Arg Val Asp Asp Val Val Lys Ser Met Tyr Pro Pro Leu
145                   150                   155                   160
Asp Pro Lys Leu Leu Asp Ala Arg Thr Thr Ala Leu Leu Leu Ser Val
                165                   170                   175
Ser His Leu Val Leu Val Thr Arg Asn Ala Cys His Leu Thr Gly Gly
            180                   185                   190
Leu Asp Trp Ile Asp Gln Ser Leu Ser Ala Ala Glu Glu His Leu Glu
        195                   200                   205
Val Leu Arg Glu Ala Ala Leu Ala Ser Glu Pro Asp Lys Gly Leu Pro
    210                   215                   220
Gly Pro Glu Gly Phe Leu Gln Glu Gln Ser Ala Ile
225                   230                   235 236
```

```
    <210> 1337
    <211> 161
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1337
Val Gly Met Glu Leu Pro Ala Val Asn Leu Lys Val Ile Leu Leu Gly
 1               5                   10                   15
His Trp Leu Leu Thr Thr Trp Gly Cys Ile Val Phe Ser Gly Ser Tyr
            20                   25                   30
Ala Trp Ala Asn Phe Thr Ile Leu Ala Leu Gly Val Trp Ala Val Ala
        35                   40                   45
Gln Arg Asp Ser Ile Asp Ala Ile Ser Met Phe Leu Gly Gly Leu Leu
    50                   55                   60
Ala Thr Ile Phe Leu Asp Ile Val His Ile Ser Ile Phe Tyr Pro Arg
65                   70                   75                   80
Val Ser Leu Thr Asp Thr Gly Arg Phe Gly Val Gly Met Ala Ile Leu
                85                   90                   95
Ser Leu Leu Leu Lys Pro Leu Ser Cys Cys Phe Val Tyr His Met Tyr
            100                  105                  110
Arg Glu Arg Gly Gly Glu Leu Leu Val His Thr Gly Phe Leu Gly Ser
        115                  120                  125
Ser Gln Asp Arg Ser Ala Tyr Gln Thr Ile Asp Ser Ala Glu Ala Pro
    130                  135                  140
Ala Asp Pro Phe Ala Val Pro Glu Gly Arg Ser Gln Asp Ala Arg Gly
145                  150                  155                  160
Tyr
161
```

```
    <210> 1338
    <211> 200
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1338
Pro Ala Ser Arg Pro Leu Leu Gly Pro Asp Thr Gly Ser Val Ala Asn
```

```
  1              5                10                 15
Ile Phe Lys Gly Leu Val Ile Leu Pro Glu Met Ser Leu Val Ile Arg
             20                25              .  30
Asn Leu Gln Arg Val Ile Pro Ile Arg Arg Ala Pro Leu Arg Ser Lys
         35                40                45
Ile Glu Ile Val Arg Arg Ile Leu Gly Val Gln Lys Phe Asp Leu Gly
     50                55                60 .
Ile Ile Cys Val Asp Asn Lys Asn Ile Gln His Ile Asn Arg Ile Tyr
 65                70                75                80
Arg Asp Arg Asn Val Pro Thr Asp Val Leu Ser Phe Pro Phe His Glu
             85                90              .  95
His Leu Lys Ala Gly Glu Phe Pro Gln Pro Asp Phe Pro Asp Asp Tyr
             100               105               110
Asn Leu Gly Asp Ile Phe Leu Gly Val Glu Tyr Ile Phe His Gln Cys
         115               120 .              125
Lys Glu Asn Glu Asp Tyr Asn Asp Val Leu Thr Val Thr Ala Thr His
     130 .             135               140
Gly Leu Cys His Leu Leu Gly Phe Thr His Gly Thr Glu Ala Glu Trp
145.             150               155               160
Gln Gln Met Phe Gln Lys Glu Lys Ala Val Leu Asp Glu Leu Gly Arg
             165               170               175
Arg Thr Gly Thr Arg Leu Gln Pro Leu Thr Pro Gly Pro Leu Pro Glu
         180              .185               190
Gly Ala Glu Gly Arg Val Pro Phe
     195               200


        <210> 1339
        <211> 267
        <212>Amino acid
        <213> Homo sapiens




        <400> 1339
Leu Arg Asn Ala Leu Asp Val Leu His Arg Glu Val Pro Arg Val Leu
 ·1              5                10                15
Val Asn Leu Val Asp Phe Leu Asn Pro Thr Ile Met Arg Gln Val Phe
             20                25                30
Leu Gly Asn Pro Asp Lys Cys Pro Val Gln Gln Ala Met Leu Glu Pro
         35                40                45
Leu Gly Ser Lys Thr Glu Thr Leu Asp Leu Arg Ala Glu Met Pro Ile
     50                55                60
Thr Cys Pro Thr Gln Asn Glu Pro Phe Leu Arg Thr Pro Arg Asn Ser
 65                70                75                80 ·
Asn Tyr Thr Tyr Pro Ile Lys Pro Ala Ile Glu Asn Trp Gly Ser Asp
             85  .             90                95
Phe Leu Cys Thr Glu Trp Lys Ala Ser Asn Ser Val Pro Thr Ser Val
             100               105               110
His Gln Leu Arg Pro Ala Asp Ile Lys Val Val Ala Ala Leu Gly Asp
         115               120               125
Ser Leu Thr Thr Ala Val Gly Ala Arg Pro Asn Asn Ser Ser Asp Leu
     130               135               140
Pro Thr Ser Trp Arg Gly Leu Ser Trp Ser Ile Gly Gly Asp Gly Asn
145               150               155               160
Leu Glu Thr His Thr Thr Leu Pro Asn Ile Leu Lys Lys Phe Asn Pro
             165               170               175
Tyr Leu Leu Gly Phe Ser Thr Ser Thr Trp Glu Gly Thr Ala Gly Leu
         ·   180               185               190
Asn Val Ala Ala Glu Gly Ala Arg Ala Arg Asp Met Pro Ala Gln Ala
             195               200               205
Trp Asp Leu Val Glu Arg Met Lys Asn Ser Pro Asp Ile Asn Leu Glu
```

834

```
        210                    215                  220
Lys Asp Trp Lys Leu Val Thr Leu Phe Ile Gly Gly Asn Asp Leu Cys
225                    230                  235                  240
His Tyr Cys Glu Asn Pro Glu Ala His Leu Ala Thr Glu Tyr Val Gln
                  245                  250                  255
His Ile Gln Gln Ala Leu Asp Ile Leu Ser Glu
                  260                  265  267
```

```
        <210> 1340
        <211> 286
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1340
Val Val Glu Phe Leu Trp Ser Arg Arg Pro Ser Gly Ser Ser Asp Pro
  1               5                  10                   15
Arg Pro Arg Arg Pro Ala Ser Lys Cys Gln Met Met Glu Glu Arg Ala
              20                  25                  30
Asn Leu Met His Met Met Lys Leu Ser Ile Lys Val Leu Leu Gln Ser
          35                  40                  45
Ala Leu Ser Leu Gly Arg Ser Leu Asp Ala Asp His Ala Pro Leu Gln
      50                  55                  60
Gln Phe Phe Val Val Met Glu His Cys Leu Lys His Gly Leu Lys Val
  65                  70                  75                  80
Lys Lys Ser Phe Ile Gly Gln Asn Lys Ser Phe Phe Gly Pro Leu Glu
              85                  90                  95
Leu Val Glu Lys Leu Cys Pro Glu Ala Ser Asp Ile Ala Thr Ser Val
          100                 105                 110
Arg Asn Leu Pro Glu Leu Lys Thr Ala Val Gly Arg Gly Arg Ala Trp
          115                 120                 125
Leu Tyr Leu Ala Leu Met Gln Lys Lys Leu Ala Asp Tyr Leu Lys Val
          130                 135                 140
Leu Ile Asp Asn Lys His Leu Leu Ser Glu Phe Tyr Glu Pro Glu Ala
145                 150                 155                 160
Leu Met Met Glu Glu Glu Gly Met Val Ile Val Gly Leu Leu Val Gly
              165                 170                 175
Leu Asn Val Leu Asp Ala Asn Leu Cys Leu Lys Gly Glu Asp Leu Asp
          180                 185                 190
Ser Gln Val Gly Val Ile Asp Phe Ser Leu Tyr Leu Lys Asp Val Gln
          195                 200                 205
Asp Leu Asp Gly Gly Lys Glu His Glu Arg Ile Thr Asp Val Leu Asp
          210                 215                 220
Gln Lys Asn Tyr Val Glu Glu Leu Asn Arg His Leu Ser Cys Thr Val
225                 230                 235                 240
Gly Asp Leu Gln Thr Lys Ile Asp Gly Leu Glu Lys Thr Asn Ser Lys
              245                 250                 255
Leu Gln Glu Arg Val Ser Ala Ala Thr Asp Arg Ile Cys Ser Leu Gln
          260                 265                 270
Glu Glu Gln Gln Gln Leu Arg Glu Gln Asn Glu Leu Ile Arg
          275                 280                 285 286
```

```
        <210> 1341
        <211> 233
        <212> Amino acid
        <213> Homo sapiens
```

```
     <400> 1341
Lys Pro Glu Gly Ala Arg Arg Val Gln Phe Val Met Gly Leu Phe Gly
 1               5                  10                  15
Lys Thr Gln Glu Lys Pro Pro Lys Glu Leu Val Asn Glu Trp Ser Leu
            20                  25                  30
Lys Ile Arg Lys Glu Met Arg Val Val Asp Arg Gln Ile Arg Asp Ile
        35                  40                  45
Gln Arg Glu Glu Glu Lys Val Lys Arg Ser Val Lys Asp Ala Ala Lys
    50                  55                  60
Lys Gly Gln Lys Asp Val Cys Ile Val Leu Ala Lys Glu Met Ile Arg
65                  70                  75                  80
Ser Arg Lys Ala Val Ser Lys Leu Tyr Ala Ser Lys Ala His Met Asn
                85                  90                  95
Ser Val Leu Met Gly Met Lys Asn Gln Leu Ala Val Leu Arg Val Ala
            100                 105                 110
Gly Ser Leu Gln Lys Ser Thr Glu Val Met Lys Ala Met Gln Ser Leu
            115                 120                 125
Val Lys Ile Pro Glu Ile Gln Ala Thr Met Arg Glu Leu Ser Lys Glu
    130                 135                 140
Met Met Lys Ala Gly Ile Ile Glu Glu Met Leu Glu Asp Thr Phe Glu
145                 150                 155                 160
Ser Met Asp Asp Gln Glu Glu Met Glu Glu Glu Ala Glu Met Glu Ile
                165                 170                 175
Asp Arg Ile Leu Phe Glu Ile Thr Ala Gly Ala Leu Gly Lys Ala Pro
        180                 185                 190
Ser Lys Val Thr Asp Ala Leu Pro Glu Pro Glu Pro Pro Gly Ala Met
    195                 200                 205
Ala Ala Ser Glu Asp Glu Glu Glu Glu Glu Glu Ala Leu Glu Ala Met
    210                 215                 220
Gln Ser Arg Leu Ala Thr Leu Arg Ser
225                 230     233


     <210> 1342
     <211> 150
     <212> Amino acid
     <213> Homo sapiens




     <400> 1342
Arg Trp Asn Ser Ile Met Glu Leu Ala Leu Leu Cys Gly Leu Val Val
 1               5                  10                  15
Met Ala Gly Val Ile Pro Ile Gln Gly Gly Ile Leu Asn Leu Asn Lys
            20                  25                  30
Met Val Lys Gln Val Thr Gly Lys Met Pro Ile Leu Ser Tyr Trp Pro
        35                  40                  45
Tyr Gly Cys His Cys Gly Leu Gly Gly Arg Gly Gln Pro Lys Asp Ala
    50                  55                  60
Thr Asp Trp Cys Cys Gln Thr His Asp Cys Cys Tyr Asp His Leu Lys
65                  70                  75                  80
Thr Gln Gly Cys Gly Ile Tyr Lys Asp Tyr Tyr Arg Tyr Asn Phe Ser
                85                  90                  95
Gln Gly Asn Ile His Cys Ser Asp Lys Gly Ser Trp Cys Glu Gln Gln
            100                 105                 110
Leu Cys Ala Cys Asp Lys Glu Val Ala Phe Cys Leu Lys Arg Asn Leu
    115                 120                 125
Asp Thr Tyr Gln Lys Arg Leu Arg Phe Tyr Trp Arg Pro His Cys Arg
    130                 135                 140
Gly Gln Thr Pro Gly Cys
```

145   150

```
        <210> 1343
        <211> 127
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1343
Lys Thr Val Ala Glu Glu Ala Ser Val Gly Asn Pro Glu Gly Ala Phe
1               5                   10                  15
Met Lys Met Leu Gln Ala Arg Lys Gln His Met Ser Thr Glu Leu Thr
            20                  25                  30
Ile Glu Ser Glu Ala Pro Ser Asp Ser Ser Gly Ile Asn Leu Ser Gly
        35                  40                  45
Phe Gly Ser Glu Gln Leu Asp Thr Asn Asp Glu Ser Asp Val Ser Ser
    50                  55                  60
Ala Leu Ser Tyr Ile Leu Pro Tyr Leu Ser Leu Arg Asn Leu Gly Ala
65                  70                  75                  80
Glu Ser Ile Leu Leu Pro Phe Thr Glu Gln Leu Phe Ser Asn Val Gln
                85                  90                  95
Asp Gly Asp Arg Leu Leu Ser Ile Leu Lys Asn Asn Arg Lys Ser Pro
            100                 105                 110
Ser Gln Ser Ser Leu Leu Gly Asn Lys Phe Lys Asn Lys Ile Phe
        115                 120                 125 127
```

```
        <210> 1344
        <211> 126
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1344
Leu Pro Leu Thr Leu Leu Leu Ala Ala Pro Phe Ala His Leu Leu Leu
1               5                   10                  15
Pro Pro Gly His Asp Gln Ser Pro Cys Trp His Pro Gly Pro Ala Leu
            20                  25                  30
Ser Pro Gly Thr Leu Gly Pro Leu Ser Trp Ala Met Ala Asn Ser Gly
        35                  40                  45
Leu Gln Leu Leu Gly Tyr Phe Leu Ala Leu Gly Gly Trp Val Gly Ile
    50                  55                  60
Ile Ala Ser Thr Ala Leu Pro Gln Trp Lys Gln Ser Ser Tyr Ala Gly
65                  70                  75                  80
Asp Ala Ser Ile Gln Leu Arg Ser Lys Val Phe Val Leu Glu Ser Glu
                85                  90                  95
Trp Gly Gly Asp Ser Leu Gly Leu Pro Arg Asp Cys Gly Trp Ser Cys
            100                 105                 110
Leu Leu His Ser Ala Val Arg Ser Glu Lys Gly Phe Trp Ser
        115                 120                 125 126
```

```
        <210> 1345
        <211> 328
        <212>Amino acid
        <213> Homo sapiens
```

<400> 1345

```
Asp Pro Arg Val Arg Pro Pro Leu Leu Gln Pro Pro Pro Leu Leu
1               5                   10                  15
Pro Arg Leu Val Ile Leu Lys Met Ala Pro Leu Asp Leu Asp Lys Tyr
            20                  25                  30
Val Glu Ile Ala Arg Leu Cys Lys Tyr Leu Pro Glu Asn Asp Leu Lys
        35                  40                  45
Arg Leu Cys Asp Tyr Val Cys Asp Leu Leu Leu Glu Glu Ser Asn Val
    50                  55                  60
Gln Pro Val Ser Thr Pro Val Thr Val Cys Gly Asp Ile His Gly Gln
65                  70                  75                  80
Phe Tyr Asp Leu Cys Glu Leu Phe Arg Thr Gly Gly Gln Val Pro Asp
                85                  90                  95
Thr Asn Tyr Ile Phe Met Gly Asp Phe Val Asp Arg Gly Tyr Tyr Ser
            100                 105                 110
Leu Glu Thr Phe Thr Tyr Leu Leu Ala Leu Lys Ala Lys Trp Pro Asp
        115                 120                 125
Arg Ile Thr Leu Leu Arg Gly Asn His Glu Ser Arg Gln Ile Thr Gln
    130                 135                 140
Val Tyr Gly Phe Tyr Asp Glu Cys Gln Thr Lys Tyr Gly Asn Ala Asn
145                 150                 155                 160
Ala Trp Arg Tyr Cys Thr Lys Val Phe Asp Met Leu Thr Val Ala Ala
                165                 170                 175
Leu Ile Asp Glu Gln Ile Leu Cys Val His Gly Gly Leu Ser Pro Asp
            180                 185                 190
Ile Lys Thr Leu Asp Gln Ile Arg Thr Ile Glu Arg Asn Gln Glu Ile
        195                 200                 205
Pro His Lys Gly Ala Phe Cys Asp Leu Val Trp Ser Asp Pro Glu Asp
    210                 215                 220
Val Asp Thr Trp Ala Ile Ser Pro Arg Gly Ala Gly Trp Leu Phe Gly
225                 230                 235                 240
Ala Lys Val Thr Asn Glu Phe Val His Ile Asn Asn Leu Lys Leu Ile
                245                 250                 255
Cys Arg Ala His Gln Leu Val His Glu Gly Tyr Lys Phe Met Phe Asp
            260                 265                 270
Glu Lys Leu Val Thr Val Trp Ser Ala Pro Asn Tyr Cys Tyr Arg Cys
        275                 280                 285
Gly Asn Ile Ala Ser Ile Met Val Phe Lys Asp Val Asn Thr Arg Glu
    290                 295                 300
Pro Lys Leu Phe Arg Ala Val Pro Asp Ser Glu Arg Val Ile Pro Pro
305                 310                 315                 320
Arg Thr Thr Thr Pro Tyr Phe Leu
                325             328
```


<210> 1346
<211> 253
<212>Amino acid
<213> Homo sapiens

<400> 1346

```
Ser Phe Ala Gly Ala Ala Ala Arg Pro Ser Thr Pro Pro Ala Ser Gly
1               5                   10                  15
Arg Gly Ala Ala Pro Gly Arg Pro Gly Pro Ser Pro Met Asp Leu Arg
            20                  25                  30
Ala Gly Asp Ser Trp Gly Met Leu Ala Cys Leu Cys Thr Val Leu Trp
```

```
            35                          40                          45
His Leu Pro Ala Val Pro Ala Leu Asn Arg Thr Gly Asp Pro Gly Pro
    50                          55                          60
Gly Pro Ser Ile Gln Lys Thr Tyr Asp Leu Thr Arg Tyr Leu Glu His
65                          70                          75                          80
Gln Leu Arg Ser Leu Ala Gly Thr Tyr Leu Asn Tyr Leu Gly Pro Pro
                85                          90                          95
Phe Asn Glu Pro Asp Phe Asn Pro Pro Arg Leu Gly Ala Glu Thr Leu
            100                         105                         110
Pro Arg Ala Thr Val Asp Leu Glu Val Trp Arg Ser Leu Asn Asp Lys
            115                         120                         125
Leu Arg Leu Thr Gln Asn Tyr Glu Ala Tyr Ser His Leu Leu Cys Tyr
    130                         135                         140
Leu Arg Gly Leu Asn Arg Gln Ala Ala Thr Ala Glu Leu Arg Arg Ser
145                         150                         155                         160
Leu Ala His Phe Cys Thr Ser Leu Gln Gly Leu Leu Gly Ser Ile Ala
                165                         170                         175
Gly Val Met Ala Ala Leu Gly Tyr Pro Leu Pro Gln Pro Leu Pro Gly
            180                         185                         190
Thr Glu Pro Thr Trp Thr Pro Gly Pro Ala His Ser Asp Phe Leu Gln
            195                         200                         205
Lys Met Asp Asp Phe Trp Leu Leu Lys Glu Leu Gln Thr Trp Leu Trp
    210                         215                         220
Arg Ser Ala Lys Asp Phe Asn Arg Leu Lys Lys Lys Met Gln Pro Pro
225                         230                         235                         240
Ala Ala Ala Val Thr Leu His Leu Gly Ala His Gly Phe
            245                         250                         253


    <210> 1347
    <211> 195
    <212>Amino acid
    <213> Homo sapiens




    <400> 1347
Ile Lys Ile Ser Leu Lys Lys Arg Ser Met Ser Gly Ile Ser Gly Cys
 1               5                          10                          15
Pro Phe Phe Leu Trp Gly Leu Leu Ala Leu Leu Gly Leu Ala Leu Val
            20                          25                          30
Ile Ser Leu Ile Phe Asn Ile Ser His Tyr Val Glu Lys Gln Arg Gln
        35                          40                          45
Asp Lys Met Tyr Ser Tyr Ser Ser Asp His Thr Arg Val Asp Glu Tyr
    50                          55                          60
Tyr Ile Glu Asp Thr Pro Ile Tyr Gly Asn Leu Asp Asp Met Ile Ser
65                          70                          75                          80
Glu Pro Met Asp Glu Asn Cys Tyr Glu Gln Met Lys Ala Arg Pro Glu
                85                          90                          95
Lys Ser Val Asn Lys Met Gln Glu Ala Thr Pro Ser Ala Gln Ala Thr
            100                         105                         110
Asn Glu Thr Gln Met Cys Tyr Ala Ser Leu Asp His Ser Val Lys Gly
            115                         120                         125
Lys Arg Arg Lys Pro Arg Lys Gln Asn Thr His Phe Ser Asp Lys Asp
    130                         135                         140
Gly Asp Glu Gln Leu His Ala Ile Asp Ala Ser Val Ser Lys Thr Thr
145                         150                         155                         160
Leu Val Asp Ser Phe Ser Pro Glu Ser Gln Ala Val Glu Glu Asn Ile
                165                         170                         175
His Asp Asp Pro Ile Arg Leu Phe Gly Leu Ile Arg Ala Lys Arg Glu
            180                         185                         190
Pro Ile Asn
```

195

<210> 1348
<211> 268
<212>Amino acid
<213> Homo sapiens

<400> 1348

Val	Glu	Phe	His	Pro	Gln	Arg	Ala	Arg	Ala	Gly	Ala	Arg	Ala	Pro	Ser
1				5					10					15	
Met	Gly	Val	Leu	Leu	Thr	Gln	Arg	Thr	Leu	Leu	Ser	Leu	Val	Leu	Ala
			20				25					30			
Leu	Leu	Phe	Pro	Ser	Met	Ala	Ser	Met	Ala	Ala	Ile	Gly	Ser	Cys	Ser
		35				40					45				
Lys	Glu	Tyr	Arg	Val	Leu	Leu	Gly	Gln	Leu	Gln	Lys	Gln	Thr	Asp	Leu
	50				55					60					
Met	Gln	Asp	Thr	Ser	Arg	Leu	Leu	Asp	Pro	Tyr	Ile	Arg	Ile	Gln	Gly
65				70					75					80	
Leu	Asp	Val	Pro	Lys	Leu	Arg	Glu	His	Cys	Arg	Glu	Arg	Pro	Gly	Ala
			85					90					95		
Phe	Pro	Ser	Glu	Glu	Thr	Leu	Arg	Gly	Leu	Gly	Arg	Arg	Cys	Phe	Leu
			100					105					110		
Gln	Thr	Leu	Asn	Ala	Thr	Leu	Gly	Cys	Val	Leu	His	Arg	Leu	Ala	Asp
		115					120					125			
Leu	Glu	Gln	Arg	Leu	Pro	Lys	Ala	Gln	Asp	Leu	Glu	Arg	Ser	Gly	Leu
	130				135					140					
Asn	Ile	Glu	Asp	Leu	Glu	Lys	Leu	Gln	Met	Ala	Arg	Pro	Asn	Ile	Leu
145				150					155					160	
Gly	Leu	Arg	Asn	Asn	Ile	Tyr	Cys	Met	Ala	Gln	Leu	Leu	Asp	Asn	Ser
			165					170					175		
Asp	Thr	Ala	Glu	Pro	Thr	Lys	Ala	Gly	Arg	Gly	Ala	Ser	Gln	Pro	Pro
		180					185					190			
Thr	Pro	Thr	Pro	Ala	Ser	Asp	Ala	Phe	Gln	Arg	Lys	Leu	Glu	Gly	Cys
	195				200					205					
Arg	Phe	Leu	His	Gly	Tyr	His	Arg	Phe	Met	His	Ser	Val	Gly	Arg	Val
	210				215					220					
Phe	Ser	Lys	Trp	Gly	Glu	Ser	Pro	Asn	Arg	Ser	Arg	Arg	His	Ser	Pro
225				230					235					240	
His	Gln	Ala	Leu	Arg	Lys	Gly	Val	Arg	Arg	Thr	Arg	Pro	Ser	Arg	Lys
			245					250					255		
Gly	Lys	Arg	Leu	Met	Thr	Arg	Gly	Gln	Leu	Pro	Arg				
			260					265			268				

<210> 1349
<211> 138
<212>Amino acid
<213> Homo sapiens

<400> 1349

Asp	Phe	Pro	Gly	Arg	Arg	Phe	Arg	Leu	Val	Trp	Leu	Leu	Val	Leu	Arg
1				5					10					15	
Leu	Pro	Trp	Arg	Val	Pro	Gly	Gln	Leu	Asp	Pro	Thr	Thr	Gly	Arg	Arg
			20				25					30			
Phe	Ser	Glu	His	Lys	Leu	Cys	Ala	Asp	Asp	Glu	Cys	Ser	Met	Leu	Met

```
              35                    40                    45
Tyr Arg Gly Glu Ala Leu Glu Asp Phe Thr Gly Pro Asp Cys Arg Phe
         50                    55                    60
Val Asn Phe Lys Lys Gly Asp Pro Val Tyr Val Tyr Tyr Lys Leu Ala
65                    70                    75                    80
Arg Gly Trp Pro Glu Val Trp Ala Gly Ser Val Gly Arg Thr Phe Gly
              85                    90                    95
Tyr Phe Pro Lys Asp Leu Ile Gln Val Val His Glu Tyr Thr Lys Glu
             100                   105                   110
Glu Leu Gln Val Pro Thr Asn Glu Thr Asp Phe Val Cys Phe Asp Gly
         115                   120                   125
Gly Arg Asp Asp Phe His Asn Tyr Asn Val
         130                   135       138
```


        <210> 1350
        <211> 236
        <212>Amino acid
        <213> Homo sapiens

        <400> 1350

```
Ser Pro Leu Gly Lys Glu Gly Gln Glu Glu Val Arg Val Lys Ile Lys
1                   5                    10                    15
Asp Leu Asn Glu His Ile Val Cys Cys Leu Cys Ala Gly Tyr Phe Val
              20                    25                    30
Asp Ala Thr Thr Ile Thr Glu Cys Leu His Thr Phe Cys Lys Ser Cys
         35                    40                    45
Ile Val Lys Tyr Leu Gln Thr Ser Lys Tyr Cys Pro Met Cys Asn Ile
         50                    55                    60
Lys Ile His Glu Thr Gln Pro Leu Leu Asn Leu Lys Leu Asp Arg Val
65                    70                    75                    80
Met Gln Asp Ile Val Tyr Lys Leu Val Pro Gly Leu Gln Asp Ser Glu
              85                    90                    95
Glu Lys Arg Ile Arg Glu Phe Tyr Gln Ser Arg Gly Leu Asp Arg Val
             100                   105                   110
Thr Gln Pro Thr Gly Glu Glu Pro Ala Leu Ser Asn Leu Gly Leu Pro
         115                   120                   125
Phe Ser Ser Phe Asp His Ser Lys Ala His Tyr Tyr Arg Tyr Asp Glu
         130                   135                   140
Gln Leu Asn Leu Cys Leu Glu Arg Leu Ser Ser Gly Lys Asp Lys Asn
145                   150                   155                   160
Lys Ser Val Leu Gln Asn Lys Tyr Val Arg Cys Ser Val Arg Ala Glu
              165                   170                   175
Val Arg His Leu Arg Arg Val Leu Cys His Arg Leu Met Leu Asn Pro
         180                   185                   190
Gln His Val Gln Leu Leu Phe Asp Asn Glu Val Leu Pro Asp His Met
         195                   200                   205
Thr Met Lys Gln Ile Trp Leu Ser Arg Trp Phe Gly Lys Pro Ser Pro
         210                   215                   220
Leu Leu Leu Gln Tyr Ser Val Lys Glu Lys Arg Arg
225                   230                   235 236
```


        <210> 1351
        <211> 178
        <212>Amino acid
        <213> Homo sapiens

<400> 1351
```
Leu Trp Trp Tyr Ser Ala His Ala Ala Val Asp Ala Met Met Asp Val
  1           5                  10                  15
Phe Gly Val Gly Phe Pro Ser Lys Val Pro Trp Lys Lys Met Ser Ala
          20                  25                  30
Glu Glu Leu Glu Asn Gln Tyr Cys Pro Ser Arg Trp Val Val Arg Leu
      35                  40                  45
Gly Ala Glu Glu Ala Leu Arg Thr Tyr Ser Gln Ile Gly Ile Glu Ala
  50                  55                  60
Thr Thr Arg Ala Arg Ala Thr Arg Lys Ser Leu Leu His Val Pro Tyr
65                  70                  75                  80
Gly Asp Gly Glu Gly Glu Lys Val Asp Ile Tyr Phe Pro Asp Glu Ser
              85                  90                  95
Ser Glu Ala Thr Thr Arg Ala Arg Ala Thr Arg Lys Ser Leu Leu His
              100                 105                 110
Val Pro Tyr Gly Asp Gly Glu Gly Glu Lys Val Asp Ile Tyr Phe Pro
          115                 120                 125
Asp Glu Ser Ser Glu Ala Leu Pro Phe Phe Leu Phe Phe His Gly Gly
      130                 135                 140
Tyr Trp Gln Ser Gly Arg His Pro Gly Pro His Gly Arg Pro Gly Asp
145                 150                 155                 160
Pro Gln Arg Cys Val Cys Pro Glu Ala Val Ser Lys Gln Gln Ala Phe
              165                 170                 175
Ser Trp
178
```

<210> 1352
<211> 284
<212> Amino acid
<213> Homo sapiens

<400> 1352
```
Gly Val Arg Met Ala Ser Arg Gly Arg Arg Pro Glu His Gly Gly Pro
  1           5                  10                  15
Pro Glu Leu Phe Tyr Asp Glu Thr Glu Ala Arg Lys Tyr Val Arg Asn
          20                  25                  30
Ser Arg Met Ile Asp Ile Gln Thr Arg Met Ala Gly Arg Ala Leu Glu
      35                  40                  45
Leu Leu Tyr Leu Pro Glu Asn Lys Pro Cys Tyr Leu Leu Asp Ile Gly
  50                  55                  60
Cys Gly Thr Gly Leu Ser Gly Ser Tyr Leu Ser Asp Glu Gly His Tyr
65                  70                  75                  80
Trp Val Gly Leu Asp Ile Ser Pro Ala Met Leu Asp Glu Ala Val Asp
              85                  90                  95
Arg Glu Ile Glu Gly Asp Leu Leu Leu Gly Asp Met Gly Gln Gly Ile
              100                 105                 110
Pro Phe Lys Pro Gly Thr Phe Asp Gly Cys Ile Ser Ile Ser Ala Val
          115                 120                 125
Gln Trp Leu Cys Asn Ala Asn Lys Lys Ser Glu Asn Pro Ala Lys Arg
      130                 135                 140
Leu Tyr Cys Phe Phe Ala Ser Leu Phe Ser Val Leu Val Arg Gly Ser
145                 150                 155                 160
Arg Ala Val Leu Gln Leu Tyr Pro Glu Asn Ser Glu Gln Leu Glu Leu
              165                 170                 175
Ile Thr Thr Gln Ala Thr Lys Ala Gly Phe Ser Gly Gly Met Val Val
          180                 185                 190
Asp Tyr Pro Asn Ser Ala Lys Ala Lys Lys Phe Tyr Leu Cys Leu Phe
```

```
                195                    200                    205
Ser Gly Pro Ser Thr Phe Ile Pro Glu Gly Leu Ser Glu Asn Gln Asp
    210                    215                    220
Glu Val Glu Pro Arg Glu Ser Val Phe Thr Asn Glu Arg Phe Pro Leu
225                    230                    235                    240
Arg Met Ser Arg Arg Gly Met Val Arg Lys Ser Arg Ala Trp Val Leu
                245                    250                    255
Glu Lys Lys Glu Arg His Arg Arg Gln Gly Arg Glu Val Arg Pro Asp
                260                    265                    270
Thr Gln Tyr Thr Gly Arg Lys Arg Lys Pro Arg Phe
            275                    280                    284
```

```
        <210> 1353
        <211> 363
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1353
Thr Leu Ile Cys Arg Met Ala Gly Cys Gly Glu Ile Asp His Ser Ile
1                   5                   10                     15
Asn Met Leu Pro Thr Asn Arg Lys Ala Asn Glu Ser Cys Ser Asn Thr
                20                     25                     30
Ala Pro Ser Leu Thr Val Pro Glu Cys Ala Ile Cys Leu Gln Thr Cys
            35                     40                     45
Val His Pro Val Ser Leu Pro Cys Lys His Val Phe Cys Tyr Leu Cys
    50                     55                     60
Val Lys Gly Ala Ser Trp Leu Gly Lys Arg Cys Ala Leu Cys Arg Gln
 65                    70                     75                     80
Glu Ile Pro Glu Asp Phe Leu Asp Lys Pro Thr Leu Leu Ser Pro Glu
                85                     90                     95
Glu Leu Lys Ala Ala Ser Arg Gly Asn Gly Glu Tyr Ala Trp Tyr Tyr
            100                    105                    110
Glu Gly Arg Asn Gly Trp Trp Gln Tyr Asp Glu Arg Thr Ser Arg Glu
            115                    120                    125
Leu Glu Asp Ala Phe Ser Lys Gly Lys Lys Asn Thr Glu Met Leu Ile
    130                    135                    140
Ala Gly Phe Leu Tyr Val Ala Asp Leu Glu Asn Met Val Gln Tyr Arg
145                    150                    155                    160
Arg Asn Glu His Gly Arg Arg Arg Lys Ile Lys Arg Asp Ile Ile Asp
                165                    170                    175
Ile Pro Lys Lys Gly Val Ala Gly Leu Arg Leu Asp Cys Asp Ala Asn
            180                    185                    190
Thr Val Asn Leu Ala Arg Glu Ser Ser Ala Asp Gly Ala Asp Ser Val
            195                    200                    205
Ser Ala Gln Ser Gly Ala Ser Val Gln Pro Leu Val Ser Ser Val Arg
    210                    215                    220
Pro Leu Thr Ser Val Asp Gly Gln Leu Thr Ser Pro Ala Thr Pro Ser
225                    230                    235                    240
Pro Asp Ala Ser Thr Ser Leu Glu Asp Ser Phe Ala His Leu Gln Leu
            245                    250                    255
Ser Gly Asp Asn Thr Ala Glu Arg Ser His Arg Gly Glu Gly Glu Glu
            260                    265                    270
Asp His Glu Ser Pro Ser Ser Gly Arg Val Pro Ala Pro Asp Thr Ser
    275                    280                    285
Ile Glu Glu Thr Glu Ser Asp Ala Ser Ser Asp Ser Glu Asp Val Ser
    290                    295                    300
Ala Val Val Ala Gln His Ser Leu Thr Gln Gln Arg Leu Leu Val Ser
305                    310                    315                    320
Asn Ala Asn Gln Thr Val Pro Asp Arg Ser Asp Arg Ser Gly Thr Asp
```

```
                        325                      330                      335
        Arg Ser Val Ala Gly Gly Gly Thr Val Ser Val Ser Val Arg Ser Arg
                    340                      345                  350
        Arg Pro Asp Gly Gln Cys Thr Val Thr Glu Val
                    355                      360      363


            <210> 1354
            <211> 368
            <212> Amino acid
            <213> Homo sapiens




            <400> 1354
        Gly Ala Thr Pro Leu Gly Ser Val Gly Gly Arg Thr Gly Lys Met Asp
        1               5                   10                  15
        Ala Ala Thr Leu Thr Tyr Asp Thr Leu Arg Phe Ala Glu Phe Glu Asp
                    20                  25                  30
        Phe Pro Glu Thr Ser Glu Pro Val Trp Ile Leu Gly Arg Lys Tyr Ser
                    35                  40                  45
        Ile Phe Thr Glu Lys Asp Glu Ile Leu Ser Asp Val Ala Ser Arg Leu
                    50                  55                  60
        Trp Phe Thr Tyr Arg Lys Asn Phe Pro Ala Ile Gly Gly Thr Gly Pro
        65                  70                  75                  80
        Thr Ser Asp Thr Gly Trp Gly Cys Met Leu Arg Cys Gly Gln Met Ile
                        85                  90                  95
        Phe Ala Gln Ala Leu Val Cys Arg His Leu Gly Arg Asp Trp Arg Trp
                    100                 105                 110
        Thr Gln Arg Lys Arg Gln Pro Asp Ser Tyr Phe Ser Val Leu Asn Ala
                    115                 120                 125
        Phe Ile Asp Arg Lys Asp Ser Tyr Tyr Ser Ile His Gln Ile Ala Gln
        130                 135                 140
        Met Gly Val Gly Glu Gly Lys Ser Ile Gly Gln Trp Tyr Gly Pro Asn
        145                 150                 155                 160
        Thr Val Ala Gln Val Leu Lys Lys Leu Ala Val Phe Asp Thr Trp Ser
                    165                 170                 175
        Ser Leu Ala Val His Ile Ala Met Asp Asn Thr Val Val Met Glu Glu
                    180                 185                 190
        Ile Arg Arg Leu Cys Arg Thr Ser Val Pro Cys Ala Gly Ala Thr Ala
                    195                 200                 205
        Phe Pro Ala Asp Ser Asp Arg His Cys Asn Gly Phe Pro Ala Gly Ala
        210                 215                 220
        Glu Val Thr Asn Arg Pro Ser Pro Trp Arg Pro Leu Val Leu Leu Ile
        225                 230                 235                 240
        Pro Leu Arg Leu Gly Leu Thr Asp Ile Asn Glu Ala Tyr Val Glu Thr
                    245                 250                 255
        Leu Lys His Cys Phe Met Met Pro Gln Ser Leu Gly Val Ile Gly Gly
                    260                 265                 270
        Lys Pro Asn Ser Ala His Tyr Phe Ile Gly Tyr Val Gly Glu Glu Leu
                    275                 280                 285
        Ile Tyr Leu Asp Pro His Thr Thr Gln Pro Ala Val Glu Pro Thr Asp
        290                 295                 300
        Gly Cys Phe Ile Pro Asp Glu Ser Phe His Cys Gln His Pro Pro Cys
        305                 310                 315                 320
        Arg Met Ser Ile Ala Glu Leu Asp Pro Ser Ile Ala Val Val Arg Gly
                    325                 330                 335
        Gly His Leu Ser Thr Gln Ala Phe Gly Ala Glu Cys Cys Leu Gly Met
                    340                 345                 350
        Thr Arg Lys Thr Phe Gly Phe Leu Arg Phe Phe Phe Ser Met Leu Gly
                    355                 360                 365      368
```

844

```
<210> 1355
<211> 117
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1355
Pro Thr Thr Ser Asn Arg Ala Ile Thr Leu Thr Ala Trp Pro Lys Ile
1               5                   10                  15
Pro Phe Leu Gly Ile Cys Glu Ala Lys Asn Pro Arg Ser Glu Asn Met
            20                  25                  30
Arg Leu Ala Thr Ile Leu Glu Val Ala Cys His His Leu Gly Ser Gly
            35                  40                  45
Pro Pro Pro Ser Trp Glu Leu Trp Glu Gln Gly Pro Pro Gly Asn Ser
        50                  55                  60
Ser Arg Tyr Ile Glu Phe Leu Asn Lys His Thr Tyr Ile Lys Gly Thr
65                  70                  75                  80
Leu Arg Val Tyr Thr Lys Lys Phe Cys Met Leu Val Ile Lys Ser Phe
                85                  90                  95
Glu Ser Lys Ser Cys Val Cys Val Tyr Asp Phe Asp Ser Lys Ser Ser
            100                 105                 110
Val Asn Val Thr Val
            115     117
```

```
<210> 1356
<211> 126
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1356
Pro Arg Val Arg Phe Arg Leu Leu His Val Thr Ser Ile Arg Ser Ala
1               5                   10                  15
Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu Ile Met Ala Ser Ser Ile
            20                  25                  30
Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys
            35                  40                  45
Leu Glu Leu Asn Leu Tyr Lys Ile Ala Lys Leu Gln Thr Val Asn Tyr
        50                  55                  60
Ile Ala Leu Val Val Gly Cys Leu Leu Pro Phe Phe Thr Leu Ser Ile
65                  70                  75                  80
Cys Tyr Leu Leu Ile Ile Arg Val Leu Leu Lys Val Glu Val Pro Glu
                85                  90                  95
Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr Thr Ile Ile Ile
            100                 105                 110
Thr Leu Ile Ile Phe Phe Leu Cys Phe Leu Pro Tyr His Thr
            115             120             125 126
```

```
<210> 1357
<211> 222
<212>Amino acid
<213> Homo sapiens
```

<400> 1357

```
Gly Arg His Trp Leu Gly Ser Ala Gln Leu Thr Asp Gly Gly Ser Ala
1               5               10              15
Arg Lys Pro Lys Met Ala Val Pro Ala Ala Leu Ile Leu Arg Glu Ser
        20              25              30
Pro Ser Met Lys Lys Ala Val Ser Leu Ile Asn Ala Ile Asp Thr Gly
        35              40              45
Arg Phe Pro Arg Leu Leu Thr Arg Ile Leu Gln Lys Leu His Leu Lys
    50              55              60
Ala Glu Ser Ser Phe Ser Glu Glu Glu Glu Lys Leu Gln Ala Ala
65              70              75              80
Phe Ser Leu Glu Lys Gln Asp Leu His Leu Val Leu Glu Thr Ile Ser
                85              90              95
Phe Ile Leu Glu Gln Ala Val Tyr His Asn Val Lys Pro Ala Ala Leu
        100             105             110
Gln Gln Gln Leu Glu Asn Ile His Leu Arg Gln Asp Lys Ala Glu Ala
        115             120             125
Phe Val Asn Thr Trp Ser Ser Met Gly Gln Glu Thr Val Glu Lys Phe
    130             135             140
Arg Gln Arg Ile Leu Ala Pro Cys Lys Leu Glu Thr Val Gly Trp Gln
145             150             155             160
Leu Asn Leu Gln Met Ala His Ser Ala Gln Ala Lys Leu Lys Ser Pro
                165             170             175
Gln Ala Val Leu Gln Leu Gly Val Asn Asn Glu Asp Ser Lys Ser Leu
        180             185             190
Glu Lys Val Leu Val Glu Phe Ser His Lys Glu Leu Phe Asp Phe Tyr
        195             200             205
Asn Lys Leu Glu Thr Ile Gln Ala Gln Leu Asp Ser Leu Thr
210             215             220     222
```

<210> 1358
<211> 116
<212> Amino acid
<213> Homo sapiens

<400> 1358

```
Glu Ala Ser Ser Ala Lys Thr Lys Arg Lys Glu Glu Lys Gly Pro Lys
1               5               10              15
Ala Lys Met Lys Leu Met Val Leu Val Phe Thr Ile Gly Leu Thr Leu
        20              25              30
Leu Leu Gly Val Gln Ala Met Pro Ala Asn Arg Leu Ser Cys Tyr Arg
        35              40              45
Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val Ala
    50              55              60
Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp Asp Gly
65              70              75              80
Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu Leu Leu Cys
                85              90              95
Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser Phe Val Ile Pro
        100             105             110
Cys Asn Asn Gln
        115 116
```

<210> 1359

```
<211> 466
<212>Amino acid
<213> Homo sapiens


     <400> 1359
Lys Met Ala Glu Ala Val Phe His Ala Pro Lys Arg Lys Arg Arg Val
1               5                   10                  15
Tyr Glu Thr Tyr Glu Ser Pro Leu Pro Ile Pro Phe Gly Gln Asp His
            20                  25                  30
Gly Pro Leu Lys Glu Phe Lys Ile Phe Arg Ala Glu Met Ile Asn Asn
        35                  40                  45
Asn Val Ile Val Arg Asn Ala Glu Asp Ile Glu Gln Leu Tyr Gly Lys
    50                  55                  60
Gly Tyr Phe Gly Lys Gly Ile Leu Ser Arg Ser Arg Pro Ser Phe Thr
65                  70                  75                  80
Ile Ser Asp Pro Lys Leu Val Ala Lys Trp Lys Asp Met Lys Thr Asn
                85                  90                  95
Met Pro Ile Ile Thr Ser Lys Arg Tyr Gln His Ser Val Glu Trp Ala
            100                 105                 110
Ala Glu Leu Met Arg Arg Gln Gly Gln Asp Glu Ser Thr Val Arg Arg
        115                 120                 125
Ile Leu Lys Asp Tyr Thr Lys Pro Leu Glu His Pro Pro Val Lys Arg
    130                 135                 140
Asn Glu Glu Ala Gln Val His Asp Lys Leu Asn Ser Gly Met Val Ser
145                 150                 155                 160
Asn Met Glu Gly Thr Ala Gly Gly Glu Arg Pro Ser Val Val Asn Gly
                165                 170                 175
Asp Ser Gly Lys Ser Gly Gly Val Gly Asp Pro Arg Glu Pro Leu Gly
            180                 185                 190
Cys Leu Gln Glu Gly Ser Gly Cys His Pro Thr Thr Glu Ser Phe Glu
        195                 200                 205
Lys Ser Val Arg Glu Asp Ala Ser Pro Leu Pro His Val Cys Cys Cys
    210                 215                 220
Lys Gln Asp Ala Leu Ile Leu Gln Arg Gly Leu His His Glu Asp Gly
225                 230                 235                 240
Ser Gln His Ile Gly Leu Leu His Pro Gly Asp Arg Gly Pro Asp His
                245                 250                 255
Glu Tyr Val Leu Val Glu Glu Ala Glu Cys Ala Met Ser Glu Arg Glu
            260                 265                 270
Ala Ala Pro Asn Glu Glu Leu Val Gln Arg Asn Arg Leu Ile Cys Arg
        275                 280                 285
Arg Asn Pro Tyr Arg Ile Phe Glu Tyr Leu Gln Leu Ser Leu Glu Glu
    290                 295                 300
Ala Phe Phe Leu Val Tyr Ala Leu Gly Cys Leu Ser Ile Tyr Tyr Glu
305                 310                 315                 320
Lys Glu Pro Leu Thr Ile Val Lys Leu Trp Lys Ala Phe Thr Val Val
            325                 330                 335
Gln Pro Thr Phe Arg Thr Thr Tyr Met Ala Tyr His Tyr Phe Arg Ser
            340                 345                 350
Lys Gly Trp Val Pro Lys Val Gly Leu Lys Tyr Gly Thr Asp Leu Leu
        355                 360                 365
Leu Tyr Arg Lys Gly Pro Pro Phe Tyr His Ala Ser Tyr Ser Val Ile
    370                 375                 380
Ile Glu Leu Val Asp Asp His Phe Glu Gly Ser Leu Arg Arg Pro Leu
385                 390                 395                 400
Ser Trp Lys Ser Leu Ala Ala Leu Ser Arg Val Ser Val Asn Val Ser
                405                 410                 415
Lys Glu Leu Met Leu Cys Tyr Leu Ile Lys Pro Ser Thr Met Thr Asp
            420                 425                 430
Lys Glu Met Glu Ser Pro Glu Cys Met Lys Arg Ile Lys Val Gln Glu
```

```
              435                      440                      445
Val Ile Leu Ser Arg Trp Val Ser Ser Arg Glu Arg Ser Asp Gln Asp
          450                      455                      460
Asp Leu
465 466
```

```
        <210> 1360
        <211> 419
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1360
Arg Asp Ile Trp Thr Met Asn Leu Gln Arg Tyr Trp Gly Glu Ile Pro
  1              5                    10                      15
Ile Ser Ser Ser Gln Thr Asn Arg Ser Ser Phe Asp Leu Leu Pro Arg
              20                    25                      30
Glu Phe Arg Leu Val Glu Val His Asp Pro Pro Leu His Gln Pro Ser
          35                    40                      45
Ala Asn Lys Pro Lys Pro Pro Thr Met Leu Asp Ile Pro Ser Glu Pro
      50                    55                      60
Cys Ser Leu Thr Ile His Thr Ile Gln Leu Ile Gln His Asn Arg Arg
65                    70                    75                      80
Leu Arg Asn Leu Ile Ala Thr Ala Gln Ala Gln Asn Gln Gln Gln Thr
                  85                    90                      95
Glu Gly Val Lys Thr Glu Glu Ser Glu Pro Leu Pro Ser Cys Pro Gly
              100                    105                      110
Ser Pro Pro Leu Pro Asp Asp Leu Leu Pro Leu Asp Cys Lys Asn Pro
          115                    120                      125
Asn Ala Pro Phe Gln Ile Arg His Ser Asp Pro Glu Ser Asp Phe Tyr
      130                    135                      140
Arg Gly Lys Gly Glu Pro Val Thr Glu Leu Ser Trp His Ser Cys Arg
145                    150                    155                      160
Gln Leu Leu Tyr Gln Ala Val Ala Thr Ile Leu Ala His Ala Gly Phe
                  165                    170                      175
Asp Cys Ala Asn Glu Ser Val Leu Glu Thr Leu Thr Asp Val Ala His
              180                    185                      190
Glu Tyr Cys Leu Lys Phe Thr Lys Leu Leu Arg Phe Ala Val Asp Arg
          195                    200                      205
Glu Ala Arg Leu Gly Gln Thr Pro Phe Pro Asp Val Met Glu Gln Val
      210                    215                      220
Phe His Glu Val Gly Ile Gly Ser Val Leu Ser Leu Gln Lys Phe Trp
225                    230                    235                      240
Gln His Arg Ile Lys Asp Tyr His Ser Tyr Met Leu Gln Ile Ser Lys
                  245                    250                      255
Gln Leu Ser Glu Glu Tyr Glu Arg Ile Val Asn Pro Glu Lys Ala Thr
              260                    265                      270
Glu Asp Ala Lys Pro Val Lys Ile Lys Glu Glu Pro Val Ser Asp Ile
          275                    280                      285
Thr Phe Pro Val Ser Glu Glu Leu Glu Ala Asp Leu Ala Ser Gly Asp
      290                    295                      300
Gln Ser Leu Pro Met Gly Val Leu Gly Ala Gln Ser Glu Arg Phe Pro
305                    310                    315                      320
Ser Asn Leu Glu Val Glu Ala Ser Pro Gln Ala Ser Ser Ala Glu Val
              325                    330                      335
Asn Ala Ser Pro Leu Trp Asn Leu Ala His Val Lys Met Glu Pro Gln
          340                    345                      350
Glu Ser Glu Glu Gly Asn Val Ser Gly His Gly Val Leu Gly Ser Asp
          355                    360                      365
Val Phe Glu Glu Pro Met Ser Gly Met Ser Glu Ala Gly Ile Pro Gln
```

```
        370                    375                    380
Ser Pro Asp Asp Ser Asp Ser Ser Tyr Gly Ser His Ser Thr Asp Ser
385                    390                    395                    400
Leu Met Gly Ser Ser Pro Val Phe Asn Gln Arg Cys Lys Lys Arg Met
                       405                    410                    415
Arg Lys Ile
        419
```

```
        <210> 1361
        <211> 220
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1361
Arg Glu Gln Ile Leu Phe Ile Glu Ile Arg Asp Thr Ala Lys Gly Gly
 1               5                  10                  15
Glu Thr Glu Gln Pro Pro Ser Leu Ser Pro Leu His Gly Gly Arg Met
                20                  25                  30
Pro Glu Met Gly Glu Gly Ile Gln Ser Leu Ala Arg Glu Thr Gln Ser
        35                  40                  45
His Arg Gly Arg Arg Gln Gly Trp Asp Ala Thr Trp Val Thr Arg Cys
    50                  55                  60
Arg Glu Ser Leu Asn Arg Gly Gly Ala Gly Ala Gly Lys Arg Ala Gly
65                  70                  75                  80
Ala Leu Ala His His Val Phe Leu Ala Leu Ile Glu Pro Asn Leu Ala
                85                  90                  95
Glu Arg Glu Ala Ser Glu Glu Glu Val Lys Ala Cys Ser Asp Glu Thr
            100                 105                 110
Val Val Ala Asp Leu Leu Val Lys Val Val Tyr Val Leu Gly Ala Ile
        115                 120                 125
Leu Lys Ile Phe Leu Arg Glu Gly Asn Val Leu Asn Gln His Ser Gly
    130                 135                 140
Met Asp Ile Glu Lys Tyr Ser Glu His Tyr Gln His Asp His Ser Pro
145                 150                 155                 160
Gly Ala Glu Asp Asp Ala Ala Gly Gly Gln Leu Arg Pro Thr Ala Gln
                165                 170                 175
Glu Arg Arg His Lys Glu Gly Ser Arg Gly Ser Pro Arg Cys Lys Arg
            180                 185                 190
Ala Arg Lys Ala Val Gly Glu Ser Pro Gly Cys Pro Arg Pro Arg Val
        195                 200                 205
Arg Pro Arg Val Arg Pro Arg Val Arg Pro Arg Val
210                 215                 220
```

```
        <210> 1362
        <211> 82
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1362
Gly Thr Arg Gly Cys Cys Arg Glu Gly Thr Ala Tyr Ala Lys Ala Tyr
 1               5                  10                  15
Gln Phe Met Ala Ser His Leu Ser Leu Gly Lys Pro Val Ser Thr Gly
                20                  25                  30
Ser Ile Pro Arg Phe Asn Lys Ala Leu Phe Asn Lys Gln Ala Lys Cys
```

```
                   35                    40                    45
Lys Pro Asn His Tyr Ser Phe Ile Gly Leu Ser Met Leu Ser Pro Glu
         50                    55                    60
Asn Phe Ser Ile Gly Cys Lys Tyr Ser Val Trp Phe Ser Glu Thr Lys
   65                    70                    75                    80
Gly Phe
   82
```

```
   <210> 1363
   <211> 143
   <212> Amino acid
   <213> Homo sapiens
```

```
   <400> 1363
Gly Ala Gln Gly Val Arg Val Gly Ile Gly Glu Val Gly Arg Val Gln
  1               5                    10                    15
Ala Pro Arg Val Ser Leu Leu His Ser Gln Gly Val Pro Arg Gly Gly
            20                    25                    30
Thr Gly Glu Ala Val Lys Glu Glu Gly Arg Gly Ser Ser Leu His Pro
         35                    40                    45
Pro Leu Pro Pro Gln Gly Leu Gly Glu Tyr Ala Ala Cys Gln Ser His
      50                    55                    60
Ala Phe Met Lys Gly Val Phe Thr Phe Val Thr Gly Thr Gly Met Ala
   65                    70                    75                    80
Phe Gly Leu Gln Met Phe Ile Gln Arg Lys Phe Pro Tyr Pro Leu Gln
                  85                    90                    95
Trp Ser Leu Leu Val Ala Val Val Ala Gly Ser Val Val Ser Tyr Gly
            100                   105                   110
Val Thr Arg Val Glu Ser Glu Lys Cys Asn Asn Leu Trp Leu Phe Leu
            115                   120                   125
Glu Thr Gly Gln Leu Pro Lys Asp Arg Ser Thr Asp Gln Arg Ser
   130                   135                   140           143
```

```
   <210> 1364
   <211> 194
   <212> Amino acid
   <213> Homo sapiens
```

```
   <220>
   <221> misc_feature
   <222> (1)...(194)
   <223> X = any amino acid or stop code
```

```
   <400> 1364
Gly Thr Ser Glu Leu Leu Cys Ile Gln Arg Trp Asn Trp Gly Pro Ala
  1               5                    10                    15
Phe Pro Pro Arg Pro Gly Leu Ala Leu Ala Pro Thr Leu Gln Leu Leu
            20                    25                    30
Val Glu Met Gly Ser Ala Lys Ser Val Pro Val Thr Pro Ala Arg Pro
         35                    40                    45
Pro Pro His Asn Lys His Leu Ala Arg Val Ala Asp Pro Arg Ser Pro
   50                    55                    60
Ser Ala Gly Ile Leu Arg Thr Pro Ile Gln Val Glu Ser Ser Pro Gln
   65                    70                    75                    80
```

```
Pro Gly Leu Pro Ala Gly Glu Gln Leu Glu Gly Leu Lys His Ala Gln
                85                  90                  95
Asp Ser Asp Pro Arg Ser Pro Leu Gly Lys Asn Xaa Gly His Gly Trp
               100                 105                 110
Gln Val Gly Gln Gly Ser Asp Leu Gly Ser Pro Gln Pro Leu Pro Pro
               115                 120                 125
Ser Ala Ser His Leu Tyr Ser Ser Arg Ala Ser Arg Cys Ser Gln Pro
    130                 135                 140
Pro Cys Leu Ser Leu Pro Trp Phe Gly Val Arg Ser Ser Pro Ala Asn
145                 150                 155                 160
Thr Tyr His Val Pro Val Thr Ser Leu Cys Pro Ser Pro Ala Leu His
                165                 170                 175
Tyr Thr Ala Leu Gln Ala Gly Ile Ile Ser Thr Ser Gln Ala Arg Ala
                180                 185                 190
Pro Arg
    194
```

```
<210> 1365
<211> 114
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(114)
<223> X = any amino acid or stop code
```

```
<400> 1365
Pro Leu Leu Leu Pro Arg Phe Ile Asp Ile Pro Cys Leu Leu Cys Tyr
1               5                  10                  15
Leu Thr Gln Val Thr Pro Asp Asp Met Tyr Ala Lys Ala Phe Leu Ile
                20                  25                  30
Lys Pro Asn Thr Ala Ile Thr Gly Thr Asp Arg Arg Lys Leu Arg Ala
            35                  40                  45
Asp Glu Thr Thr Asp Phe Pro Thr Leu Gly Thr Asp Gln Ile Tyr Glu
    50                  55                  60
Leu Leu Pro Gly Lys Asp Glu Leu Asn Ile Val Lys Ser Asn Ala His
65                  70                  75                  80
Lys Arg Asp Ala Xaa Thr Ala Tyr Val Ser Gly Glu Asn His Ile Leu
                85                  90                  95
Ser Glu Pro Xaa Lys Asn Leu Tyr Pro Ala Val Asn Thr Leu Ser Ser
               100                 105                 110
Tyr Pro
    114
```

```
<210> 1366
<211> 80
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1366
Ser Arg Gln Pro Pro Pro Leu Leu Thr Met Val Phe Leu Leu Glu Phe
1               5                  10                  15
Leu Phe Leu Val Phe Phe Pro Gly Cys Val Asn Gln Leu Leu Leu Ser
```

```
                    20                    25                    30
Tyr Pro Trp Gln Gly Gln Gly Thr Ser Leu Trp Ser Ser Leu Ser Phe
            35                    40                    45
His Trp Leu Leu Pro Gln Glu Asp Ser Ser Arg Leu Ser Ile Phe Pro
        50                    55                    60
Leu Arg Ala Gly Ser Pro Pro Gln Pro Ala Gln Ala Pro Gln Arg Ile
65                    70                    75                    80
```

<210> 1367
<211> 301
<212>Amino acid
<213> Homo sapiens

<400> 1367
```
Lys Ser Arg Glu Gln Ser Ser Leu Phe Ala Ala Asp Ala Glu Arg Ser
 1               5                    10                    15
Trp Gly Gly Lys Ser Cys Cys Leu Leu Arg Trp Arg Phe Val Gly Lys
            20                    25                    30
Ala Ser His Phe Pro Arg Leu Leu Pro Leu Pro Gly Glu Glu Arg Pro
            35                    40                    45
Glu Thr Lys Glu Arg Ala Trp Lys Met Glu Gln Thr Trp Thr Arg Asp
        50                    55                    60
Tyr Phe Ala Glu Asp Asp Gly Glu Met Val Pro Arg Thr Ser His Thr
65                    70                    75                    80
Ala Ala Ser Val Ser Leu Thr Ala Phe Leu Ser Asp Thr Lys Asp Arg
                85                    90                    .95
Gly Pro Pro Val Gln Ser Gln Ile Trp Arg Ser Gly Glu Lys Val Pro
            100                   105                   110
Phe Val Gln Thr Tyr Ser Leu Arg Ala Phe Glu Lys Pro Pro Gln Val
        115                   120                   125
Gln Thr Gln Ala Leu Arg Asp Phe Glu Lys His Leu Asn Asp Leu Lys
    130                   135                   140
Lys Glu Asn Phe Ser Leu Lys Leu Leu Ile Tyr Phe Leu Glu Glu Arg
145                   150                   155                   160
Met Gln Gln Lys Tyr Glu Ala Ser Arg Glu Asp Ile Tyr Lys Arg Asn
                165                   170                   175
Thr Glu Leu Lys Val Glu Val Glu Ser Leu Lys Arg Glu Leu Gln Asp
                180                   185                   190
Lys Lys Gln His Leu Asp Lys Thr Trp Ala Asp Val Glu Asn Leu Asn
        195                   200                   205
Ser Gln Asn Glu Ala Glu Leu Arg Arg Gln Phe Glu Glu Arg Gln Gln
    210                   215                   220
Glu Met Glu His Val Tyr Glu Leu Leu Glu Asn Lys Met Gln Leu Leu
225                   230                   235                   240
Gln Glu Glu Ser Arg Leu Ala Lys Asn Glu Ala Ala Arg Met Ala Ala
                245                   250                   255
Leu Val Glu Ala Glu Lys Glu Cys Asn Leu Glu Leu Ser Glu Lys Leu
            260                   265                   270
Lys Gly Val Thr Lys Asn Trp Glu Asp Val Pro Gly Asp Gln Val Lys
        275                   280                   285
Pro Asp Gln Tyr Thr Glu Ala Leu Ala Gln Arg Asp Lys
    290                   295                   300 301
```

<210> 1368
<211> 308
<212>Amino acid
```

```
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(308)
        <223> X = any amino acid or stop code
```

```
        <400> 1368
Thr Arg Arg Arg Gly Thr Thr Trp Arg Ser Pro Arg Pro Arg Arg Ala
 1               5                  10                15
Ser Thr Ser Arg Pro Ser Thr Arg Pro Arg Gly Val Ala Ser Trp Pro
            20                  25                  30
Trp Glu Thr Ala Gly Thr Ala Thr Thr Gly Pro Gly Pro Ser Ala Arg
        35                  40                  45
Thr Arg Arg Arg Ala Ala Arg Arg Arg Ser Arg Pro Arg Arg Arg
    50              .       55              60
Ala His Gly Gly Leu Ser Gln Pro Ala Gly Trp Gln Ser Leu Leu Ser
 65              70                  75                  80
Phe Thr Ile Leu Phe Leu Ala Trp Leu Ala Gly Phe Ser Ser Arg Leu
                85                  90                  95
Phe Ala Val Ile Arg Phe Glu Ser Ile Ile His Glu Phe Asp Pro Trp
            100                 105                 110
Phe Asn Tyr Arg Ser Thr His His Leu Ala Ser His Gly Phe Tyr Glu
        115                 120                 125
Phe Leu Asn Trp Phe Asp Glu Arg Ala Trp Tyr Pro Leu Gly Arg Ile
        130                 135                 140
Val Gly Gly Thr Val Tyr Pro Gly Leu Met Ile Thr Ala Gly Leu Ile
145                 150                 155                 160
His Trp Ile Leu Asn Thr Leu Asn Ile Thr Val His Ile Arg Asp Val
                165                 170                 175
Cys Val Phe Leu Ala Pro Thr Phe Ser Gly Leu Thr Ser Ile Ser Thr
            180                 185                 190
Phe Leu Leu Thr Arg Glu Leu Trp Asn Gln Gly Ala Gly Leu Leu Ala
        195                 200                 205
Ala Cys Phe Ile Ala Ile Val Pro Gly Tyr Ile Ser Arg Ser Val Ala
    210                 215                 220
Gly Ser Phe Asp Asn Glu Gly Ile Ala Ile Phe Ala Leu Gln Phe Thr
225                 230                 235                 240
Tyr Tyr Leu Trp Val Lys Ser Val Lys Thr Gly Ser Val Phe Trp Thr
                245                 250                 255
Met Cys Cys Cys Leu Ser Tyr Phe Tyr Met Val Ser Ala Trp Gly Gly
            260                 265                 270
Tyr Val Phe Ile Ile Asn Leu Ile Pro Leu His Ala Phe Val Leu Val
        275                 280                 285
Leu Met Gln Arg Tyr Ser Lys Arg Val Tyr Ile Xaa Tyr Ser Thr Phe
    290                 295                 300
Tyr Ile Val Gly
305         308
```

```
        <210> 1369
        <211> 212
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1369
```

```
Arg Arg Leu Ile Val Val Leu Ser Asp Ala Phe Leu Ser Arg Ala Trp
 1               5                   10                  15
Cys Ser His Ser Phe Arg Val Gly Pro Ala Arg Gly Trp Val Gly Pro
            20                  25                  30
Ser Val Ala Pro Thr Pro Leu Thr Val Pro Pro Arg Arg Glu Gly Leu
        35                  40                  45
Cys Arg Leu Leu Glu Leu Thr Arg Arg Pro Ile Phe Ile Thr Phe Glu
    50                  55                  60
Gly Gln Arg Arg Asp Pro Ala His Pro Ala Leu Arg Leu Leu Arg Gln
65                  70                  75                  80
His Arg His Leu Val Thr Leu Leu Leu Trp Arg Pro Gly Ser Val Thr
                85                  90                  95
Pro Ser Ser Asp Phe Trp Lys Glu Val Gln Leu Ala Leu Pro Arg Lys
            100                 105                 110
Val Arg Tyr Arg Pro Val Glu Gly Asp Pro Gln Thr Gln Leu Gln Asp
        115                 120                 125
Asp Lys Asp Pro Met Leu Ile Leu Arg Gly Arg Val Pro Glu Gly Arg
    130                 135                 140
Ala Leu Asp Ser Glu Val Asp Pro Asp Pro Glu Gly Asp Leu Gly Val
145                 150                 155                 160
Arg Gly Pro Val Phe Gly Glu Pro Ser Ala Pro Pro His Thr Ser Gly
                165                 170                 175
Val Ser Leu Gly Glu Ser Arg Ser Ser Glu Val Asp Val Ser Asp Leu
            180                 185                 190
Gly Ser Arg Asn Tyr Ser Ala Arg Thr Asp Phe Tyr Cys Leu Val Ser
        195                 200                 205
Lys Asp Asp Met
210         212


        <210> 1370
        <211> 281
        <212>Amino acid
        <213> Homo sapiens



    <400> 1370
Leu Ser His Glu Gly Trp Arg Arg Gly Arg Glu Gly Glu Arg Ile Asn
 1               5                   10                  15
Ser Ser Val Ala Ser Leu Ala Pro Leu Cys Ile Leu Pro Asp Leu Pro
            20                  25                  30
Ser Asn Met His Leu Ala Arg Leu Val Gly Ser Cys Ser Leu Leu Leu
        35                  40                  45
Leu Leu Gly Ala Leu Ser Gly Trp Ala Ala Ser Asp Asp Pro Ile Glu
    50                  55                  60
Lys Val Ile Glu Gly Ile Asn Arg Gly Leu Ser Asn Ala Glu Arg Glu
65                  70                  75                  80
Val Gly Lys Ala Leu Asp Gly Ile Asn Ser Gly Ile Thr His Ala Gly
                85                  90                  95
Arg Glu Val Glu Lys Val Phe Asn Gly Leu Ser Asn Met Gly Ser His
            100                 105                 110
Thr Gly Lys Glu Leu Asp Lys Gly Val Gln Gly Leu Asn His Gly Met
        115                 120                 125
Asp Lys Val Ala His Glu Ile Asn His Gly Ile Gly Gln Ala Gly Lys
    130                 135                 140
Glu Ala Glu Lys Leu Gly His Gly Val Asn Asn Ala Ala Gly Gln Ala
145                 150                 155                 160
Gly Lys Glu Ala Asp Lys Ala Val Gln Gly Phe His Thr Gly Val His
                165                 170                 175
Gln Ala Gly Lys Glu Ala Glu Lys Leu Gly Gln Gly Val Asn His Ala
            180                 185                 190
```

```
Ala Asp Gln Ala Gly Lys Glu Val Glu Lys Leu Gly Gln Gly Ala His
        195                     200                 205
His Ala Ala Gly Gln Ala Gly Lys Glu Leu Gln Asn Ala His Asn Gly
        210                     215                 220
Val Asn Gln Ala Ser Lys Glu Ala Asn Gln Leu Leu Asn Gly Asn His
225                     230                 235                 240
Gln Ser Gly Ser Ser Ser His Gln Gly Gly Ala Thr Thr Thr Pro Leu
                245                 250                 255
Ala Ser Gly Ala Ser Val Asn Thr Pro Phe Ile Asn Leu Pro Ala Leu
        260                     265                 270
Trp Arg Ser Val Ala Asn Ile Met Pro
        275                 280 281
```

```
        <210> 1371
        <211> 119
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1371
Ser Ala Ser Gly Gly Leu Gly Met Thr Val Glu Gly Pro Glu Gly Ser
  1             5                 10                  15
Glu Arg Glu His Arg Pro Pro Glu Lys Pro Pro Arg Pro Pro Arg Pro
        20                      25                  30
Leu His Leu Ser Asp Arg Ser Phe Arg Arg Lys Lys Asp Ser Val Glu
        35                      40                  45
Ser His Pro Thr Trp Val Asp Asp Thr Arg Ile Asp Ala Asp Ala Ile
    50                  55                  60
Val Glu Lys Ile Val Gln Ser Gln Asp Phe Thr Asp Gly Ser Asn Thr
65                      70                  75                  80
Glu Asp Ser Asn Leu Arg Leu Phe Val Ser Arg Asp Gly Ser Ala Thr
                85                  90                  95
Leu Ser Gly Ile Gln Leu Ala Thr Arg Val Ser Ser Gly Val Tyr Glu
            100                 105                 110
Pro Val Val Ile Glu Ser His
            115             119
```

```
        <210> 1372
        <211> 108
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1372
Glu Arg Ser Gly Trp Pro Gln Pro Glu Gly Thr Val Thr Ala Gln Gly
  1             5                 10                  15
Pro Leu Phe Trp Glu Arg Leu Ser Gly Ala Val Thr Val Ser Ser Gly
        20                      25                  30
Tyr Lys Ala Asp Met Trp Pro Ser Phe Pro Gln Val Arg Val Gly Ser
        35                      40                  45
Phe Leu Phe Gly Ile Leu Phe Phe Ser Phe Gly Ser Ser Ser Leu Pro
    50                  55                  60
Pro Gly Leu Pro Pro Pro Ala Ser Leu Leu Cys Cys Ala Val Gln Trp
65                      70                  75                  80
Gly Ala Arg Ala Leu Phe Leu Pro Cys Leu Lys Glu Arg Ala Leu Gly
                85                  90                  95
```

```
Met Glu Met Arg Asn Asn Thr Leu Ser Phe Arg Gln
        100                     105         108
```

<210> 1373
<211> 209
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(209)
<223> X = any amino acid or stop code

<400> 1373

```
Ser Ser Ser Asn Leu Arg Leu Ser Phe Leu Ile Asn Glu Asn Ile Leu
 1           5               10                  15
Gly Lys Cys Phe Arg Ser Gly Pro Ser Cys Ala Gly Pro Arg Ile Ser
        20              25                  30
Pro Leu Ala Ala Gln Tyr Glu Cys Pro Arg Pro Ser Leu Leu Ile Met
        35              40                  45
Ala Ser Val Pro Lys Thr Asn Lys Ile Glu Pro Arg Ser Tyr Ser Ile
    50              55                  60
Ile Pro Ser Cys Gly Ile Arg Arg Leu Gly Pro Ala Leu Asn Thr Leu
65              70                  75                      80
Ile Phe Gln Ser Lys Arg Phe Gly Pro Arg Gly His Ser Ala Lys Ser
                85                  90                  95
Ile Glu Gly Ala Pro Arg Gly Lys Gly Arg Gly Arg Ala Val Ala Arg
                100             105                 110
Leu Ala Ala Asp Arg Pro Pro Ala Pro Lys Ile Gln Leu Arg Ala Phe
        115                 120                 125
Xaa Leu Gln Gln Leu Xaa Tyr Thr Leu Leu Glu Leu Glu Leu Pro Arg
        130                 135                 140
Leu Leu Ala Pro Asp Leu Pro Ser Asn Gly Ser Ser Leu Lys Asp Leu
145                 150                 155                 160
Lys Trp Thr His Ser Asn Tyr Arg Ala Ser Lys Glu Ser Cys Ile Val
                165                 170                 175
Ile Phe Val Thr Thr Ser Pro Gly Arg Glu Trp Val Ile Cys Ala Leu
                180                 185                 190
Ala Ala Phe Leu Gly Cys Gly Ser Leu Ser Gln Ala Pro Ser Pro Glu
        195                 200                 205
Ser
209
```

<210> 1374
<211> 153
<212>Amino acid
<213> Homo sapiens

<400> 1374

```
Leu Arg Ile Ile Asn Thr Tyr Phe Cys Phe Lys Phe Leu Ile Val Asn
 1           5               10                  15
Tyr Ile His Gly Thr Thr Lys Ala Arg Lys Pro His Val Leu Gly Glu
        20              25                  30
Ser Leu Ile Ser Ala Met Ser Arg Gln Glu Pro Lys Met Phe Val Leu
```

```
              35                        40                        45
Leu Tyr Val Thr Ser Phe Ala Ile Cys Ala Ser Gly Gln Pro Arg Gly
      50                        55                        60
Asn Gln Leu Lys Gly Glu Asn Tyr Ser Pro Arg Tyr Ile Cys Ser Ile
      65                        70                        75            80
Pro Gly Leu Pro Gly Pro Pro Gly Pro Pro Gly Ala Asn Gly Ser Pro
                  85                        90                        95
Gly Pro His Gly Arg Ile Gly Leu Pro Gly Arg Asp Gly Arg Asp Gly
              100                       105                       110
Arg Lys Gly Glu Lys Gly Glu Lys Gly Thr Ala Gly Leu Arg Gly Lys
              115                       120                       125
Thr Gly Pro Leu Gly Leu Ala Gly Glu Lys Gly Asp Gln Gly Glu Thr
          130                       135                       140
Gly Lys Lys Gly Pro Ile Gly Pro Glu
145                       150       153
```

```
    <210> 1375
    <211> 149
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1375
Phe Ala Ser Ala Met Leu Gly Ser Arg Val Asp Arg Pro Lys Leu Ser
1                   5                         10                        15
Val Ala Pro Ser Val Val Leu Glu Glu Asp Gln Val Leu Val Ser Pro
                  20                        25                        30
Ala Val Asp Leu Glu Ala Gly Cys Arg Leu Arg Asp Phe Thr Glu Lys
              35                        40                        45
Ile Met Asn Val Lys Gly Lys Val Ile Leu Ser Met Leu Val Val Ser
      50                        55                        60
Thr Val Ile Ile Val Phe Trp Glu Phe Ile Asn Ser Thr Glu Gly Ser
65                        70                        75            80
Phe Leu Trp Ile Tyr His Ser Lys Asn Pro Glu Val Asp Asp Ser Ser
                  85                        90                        95
Ala Gln Lys Gly Trp Trp Phe Leu Ser Trp Phe Asn Asn Gly Ile His
              100                       105                       110
Asn Tyr Gln Gln Gly Glu Glu Asp Ile Asp Lys Glu Lys Gly Arg Glu
              115                       120                       125
Glu Thr Lys Gly Arg Lys Met Thr Gln Gln Ser Phe Gly Tyr Gly Thr
          130                       135                       140
Gly Leu Ile Gln Thr
145                   149
```

```
    <210> 1376
    <211> 416
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1376
Gly Ser His Arg Phe Ser Leu Ala Ser Pro Leu Asp Pro Glu Val Gly
1                   5                         10                        15
Pro Tyr Cys Asp Thr Pro Thr Met Arg Thr Leu Phe Asn Leu Leu Trp
                  20                        25                        30
Leu Ala Leu Ala Cys Ser Pro Val His Thr Thr Leu Ser Lys Ser Asp
```

```
                 35                      40                      45
Ala Lys Lys Ala Ala Ser Lys Thr Leu Leu Glu Lys Ser Gln Phe Ser
          50                      55                      60
Asp Lys Pro Val Gln Asp Arg Gly Leu Val Val Thr Asp Leu Lys Ala
  65                      70                      75                      80
Glu Ser Val Val Leu Glu His Arg Ser Tyr Cys Ser Ala Lys Ala Arg
                  85                      90                      95
Asp Arg His Phe Ala Gly Asp Val Leu Gly Tyr Val Thr Pro Trp Asn
              100                     105                     110
Ser His Gly Tyr Asp Val Thr Lys Val Phe Gly Ser Lys Phe Thr Gln
              115                     120                     125
Ile Ser Pro Val Trp Leu Gln Leu Lys Arg Arg Gly Arg Glu Met Phe
      130                     135                     140
Glu Val Thr Gly Leu His Asp Val Asp Gln Gly Trp Met Arg Ala Val
145                     150                     155                     160
Arg Lys His Ala Lys Gly Leu His Ile Val Pro Arg Leu Leu Phe Glu
              165                     170                     175
Asp Trp Thr Tyr Asp Asp Phe Arg Asn Val Leu Asp Ser Glu Asp Glu
              180                     185                     190
Ile Glu Glu Leu Ser Lys Thr Val Val Gln Val Ala Lys Asn Gln His
              195                     200                     205
Phe Asp Gly Phe Val Val Glu Val Trp Asn Gln Leu Leu Ser Gln Lys
      210                     215                     220
Arg Val Gly Leu Ile His Met Leu Thr His Leu Ala Glu Ala Leu His
225                     230                     235                     240
Gln Ala Arg Leu Leu Ala Leu Leu Val Ile Pro Pro Ala Ile Thr Pro
              245                     250                     255
Gly Thr Asp Gln Leu Gly Met Phe Thr His Lys Glu Phe Glu Gln Leu
              260                     265                     270
Ala Pro Val Leu Asp Gly Phe Ser Leu Met Thr Tyr Asp Tyr Ser Thr
      275                     280                     285
Ala His Gln Pro Gly Pro Asn Ala Pro Leu Ser Trp Val Arg Ala Cys
  290                     295                     300
Val Gln Val Leu Asp Pro Lys Ser Lys Trp Arg Ser Lys Ile Leu Leu
305                     310                     315                     320
Gly Leu Asn Phe Tyr Gly Met Asp Tyr Ala Thr Ser Lys Asp Ala Arg
              325                     330                     335
Glu Pro Val Val Gly Ala Arg Tyr Ile Gln Thr Leu Lys Asp His Arg
              340                     345                     350
Pro Arg Met Val Trp Asp Ser Gln Val Ser Glu His Phe Phe Glu Tyr
      355                     360                     365
Lys Lys Ser Arg Ser Gly Arg His Val Val Phe Tyr Pro Thr Leu Lys
      370                     375                     380
Ser Leu Gln Val Arg Leu Glu Leu Ala Arg Glu Leu Gly Val Gly Val
385                     390                     395                     400
Ser Ile Trp Glu Leu Gly Gln Gly Leu Asp Tyr Phe Tyr Asp Leu Leu
              405                     410                     415 416
```

```
        <210> 1377
        <211> 316
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1377
Gly Arg Glu Gly Thr Gly Trp Gly Pro Ala Met Ser Glu Val Thr Arg
  1               5                      10                     15
Ser Leu Leu Gln Arg Trp Gly Ala Ser Phe Arg Arg Gly Ala Asp Phe
```

```
            20                      25                      30
Asp Ser Trp Gly Gln Leu Val Glu Ala Ile Asp Glu Tyr Gln Ile Leu
        35                      40                      45
Ala Arg His Leu Gln Lys Glu Ala Gln Ala Gln His Asn Asn Ser Glu
    50                      55                      60
Phe Thr Glu Glu Gln Lys Lys Thr Ile Gly Lys Ile Ala Thr Cys Leu
65                      70                      75                      80
Glu Leu Arg Ser Ala Ala Leu Gln Ser Thr Gln Ser Gln Glu Glu Phe
            85                      90                      95
Lys Leu Glu Asp Leu Lys Lys Leu Glu Pro Ile Leu Lys Asn Ile Leu
            100                     105                     110
Thr Tyr Asn Lys Glu Phe Pro Phe Asp Val Gln Pro Val Pro Leu Arg
        115                     120                     125
Arg Ile Leu Ala Pro Gly Glu Glu Glu Asn Leu Glu Phe Glu Glu Asp
    130                     135                     140
Glu Glu Glu Gly Gly Ala Gly Ala Gly Ser Pro Asp Ser Phe Pro Ala
145                     150                     155                     160
Arg Val Pro Gly Thr Leu Leu Pro Arg Leu Pro Ser Glu Pro Gly Met
            165                     170                     175
Thr Leu Leu Thr Ile Arg Ile Glu Lys Ile Gly Leu Lys Asp Ala Gly
            180                     185                     190
Gln Cys Ile Asn Pro Tyr Ile Thr Val Ser Val Lys Asp Leu Asn Gly
        195                     200                     205
Ile Asp Leu Thr Pro Val Gln Asp Thr Pro Val Ala Ser Arg Lys Glu
    210                     215                     220
Asp Thr Tyr Val His Phe Asn Val Asp Ile Glu Leu Gln Lys His Val
225                     230                     235                     240
Glu Lys Leu Thr Lys Gly Ala Ala Ile Phe Phe Glu Phe Lys His Tyr
            245                     250                     255
Lys Pro Lys Lys Arg Phe Thr Ser Thr Lys Cys Phe Ala Phe Met Glu
        260                     265                     270
Met Asp Glu Ile Lys Leu Gly Pro Ile Val Ile Glu Leu Tyr Lys Lys
    275                     280                     285
Pro Thr Asp Phe Lys Arg Lys Gln Leu Gln Leu Leu Thr Lys Lys Pro
    290                     295                     300
Leu Tyr Leu His Leu His Gln Thr Leu His Lys Glu
305                     310                     315 316
```

```
<210> 1378
<211> 90
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1378
Gly Ser Ile Thr Ser Glu Pro Ser Leu Asp Ser Leu Gln Pro Leu Pro
 1               5                   10                  15
Pro Gly Phe Lys Arg Phe Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp
            20                      25                      30
Tyr Arg Arg Pro Pro Pro Gly Leu Ala Tyr Phe Cys Ile Phe Ser Arg
        35                      40                      45
Asp Glu Val Ser Pro Cys Trp Pro Gly Cys Ser Pro Ser Pro Asp Leu
    50                      55                      60
Met Ile Arg Leu Pro Arg Pro Pro Ser Val Gly Ile Thr Gly Val Ser
65                      70                      75                      80
His Arg Ala Trp Pro Thr Ile Asp Asn Phe
            85                      90
```

```
<210> 1379
```

```
        <211> 332
        <212>Amino acid
        <213> Homo sapiens




        <400> 1379
Lys Met Pro Val Pro Trp Phe Leu Leu Ser Leu Ala Leu Gly Arg Ser
 1               5                   10                  15
Pro Val Val Leu Ser Leu Glu Arg Leu Val Gly Pro Gln Asp Ala Thr
            20                  25                  30
His Cys Ser Pro Gly Leu Ser Cys Arg Leu Trp Asp Ser Asp Ile Leu
        35                  40                  45
Cys Leu Pro Gly Asp Ile Val Pro Ala Pro Gly Pro Val Leu Ala Pro
        50                  55                  60
Thr His Leu Gln Thr Glu Leu Val Leu Arg Cys Gln Lys Glu Thr Asp
 65                  70                  75                  80
Cys Asp Leu Cys Leu Arg Val Ala Val His Leu Ala Val His Gly His
                    85                  90                  95
Trp Glu Glu Pro Glu Asp Glu Glu Lys Phe Gly Gly Ala Ala Asp Ser
            100                 105                 110
Gly Val Glu Glu Pro Arg Asn Ala Ser Leu Gln Ala Gln Val Val Leu
        115                 120                 125
Ser Phe Gln Ala Tyr Pro Thr Ala Arg Cys Val Leu Leu Glu Val Gln
        130                 135                 140
Val Pro Ala Ala Leu Val Gln Phe Gly Gln Ser Val Gly Ser Val Val
145                 150                 155                 160
Tyr Asp Cys Phe Glu Ala Ala Leu Gly Ser Glu Val Arg Ile Trp Ser
                165                 170                 175
Tyr Thr Gln Pro Arg Tyr Glu Lys Glu Leu Asn His Thr Gln Gln Leu
            180                 185                 190
Pro Asp Cys Arg Gly Leu Glu Val Trp Asn Ser Ile Pro Ser Cys Trp
            195                 200                 205
Ala Leu Pro Trp Leu Asn Val Ser Ala Asp Gly Asp Asn Val His Leu
        210                 215                 220
Val Leu Asn Val Ser Glu Glu Gln His Phe Gly Leu Ser Leu Tyr Trp
225                 230                 235                 240
Asn Gln Val Gln Gly Pro Pro Lys Pro Arg Trp His Lys Asn Leu Val
            245                 250                 255
Arg Pro Pro Pro Ser Gln Val His Ser His Cys Arg Pro Cys Leu Cys
            260                 265                 270
Lys Asp Ala Val Pro Tyr Gln Arg Gly Ser Leu Lys Arg Thr His Pro
        275                 280                 285
Lys Gln Gly Lys Ile Gly Gly Gly Thr Ser Ala Phe Leu Val Ser Leu
        290                 295                 300
Thr Leu Ala Ser Ser Ser Ser Leu Ser Ser Pro Thr Ser Phe Leu
305                 310                 315                 320
Tyr Leu Phe His Arg Leu Asp Arg Arg Ser Leu Pro
            325                 330     332


        <210> 1380
        <211> 117
        <212>Amino acid
        <213> Homo sapiens




        <400> 1380
Leu Arg Leu Trp Asn Arg Asn Gln Met Met His Asn Ile Ile Val Lys
```

```
    1                   5                   10                  15
Glu Leu Ile Val Thr Phe Phe Leu Gly Ile Thr Val Val Gln Met Leu
                20                      25                  30
Ile Ser Val Thr Gly Leu Lys Gly Val Glu Ala Gln Asn Gly Ser Glu
            35                      40                  45
Ser Glu Val Phe Val Gly Lys Tyr Glu Thr Leu Val Phe Tyr Trp Pro
        50                      55                  60
Ser Leu Leu Cys Leu Ala Phe Leu Leu Gly Arg Phe Leu His Met Phe
65                      70                      75                  80
Val Lys Ala Leu Arg Val His Leu Gly Trp Glu Leu Gln Val Glu Glu
                85                      90                  95
Lys Ser Val Leu Glu Val His Gln Gly Glu His Val Lys Gln Leu Leu
            100                     105                 110
Arg Ile Pro Arg Pro
            115     117
```

```
        <210> 1381
        <211> 216
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1381
Lys Val Asn Arg Lys Leu Arg Lys Lys Gly Lys Ile Ser His Asp Lys
1                   5                       10                  15
Arg Lys Lys Ser Arg Ser Lys Ala Ile Gly Ser Asp Thr Ser Asp Ile
                20                      25                  30
Val His Ile Trp Cys Pro Glu Gly Met Lys Thr Ser Asp Ile Lys Glu
            35                      40                  45
Leu Asn Ile Val Leu Pro Glu Phe Glu Lys Thr His Leu Glu His Gln
        50                      55                  60
Gln Arg Ile Glu Ser Lys Val Cys Lys Ala Ala Ile Ala Thr Phe Tyr
65                      70                      75                  80
Val Asn Val Lys Glu Gln Phe Ile Lys Met Leu Lys Glu Ser Gln Met
                85                      90                  95
Leu Thr Asn Leu Lys Arg Lys Asn Ala Lys Met Ile Ser Asp Ile Glu
            100                     105                 110
Lys Lys Arg Gln Arg Met Ile Glu Val Gln Asp Glu Leu Leu Arg Leu
            115                     120                 125
Glu Pro Gln Leu Lys Gln Leu Gln Thr Lys Tyr Asp Glu Leu Lys Glu
            130                     135                 140
Arg Lys Ser Ser Leu Arg Asn Ala Ala Tyr Phe Leu Ser Asn Leu Lys
145                     150                     155                 160
Gln Leu Tyr Gln Asp Tyr Ser Asp Val Gln Ala Gln Glu Pro Asn Val
                165                     170                 175
Lys Glu Thr Tyr Asp Ser Ser Ser Leu Pro Ala Leu Leu Phe Lys Ala
                180                     185                 190
Arg Thr Leu Leu Gly Ala Glu Ser His Leu Arg Asn Ile Asn His Gln
            195                     200                 205
Leu Glu Lys Leu Leu Asp Gln Gly
    210                     215 216
```

```
        <210> 1382
        <211> 137
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
```

<222> (1)...(137)
<223> X = any amino acid or stop code

<400> 1382

```
Val Trp Val Ala Met Glu Glu Pro Pro Val Arg Glu Glu Glu Xaa Glu
1               5                   10                  15
Glu Gly Glu Glu Asp Glu Glu Arg Asp Glu Val Gly Pro Glu Gly Ala
            20                  25                  30
Leu Gly Lys Ser Pro Phe Gln Leu Thr Ala Glu Asp Val Tyr Asp Ile
        35                  40                  45
Ser Tyr Leu Leu Gly Arg Glu Leu Met Ala Leu Gly Ser Asp Pro Arg
    50                  55                  60
Val Thr Gln Leu Gln Phe Lys Val Val Arg Val Leu Glu Met Leu Glu
65                  70                  75                  80
Ala Leu Val Asn Glu Gly Ser Leu Ala Leu Glu Glu Leu Lys Met Glu
            85                  90                  95
Arg Asp His Leu Arg Lys Glu Val Glu Gly Leu Arg Arg Gln Ser Pro
            100                 105                 110
Pro Ala Ser Gly Glu Trp Pro Asp Ser Thr Lys Arg Arg Pro Arg Arg
    115                 120                 125
Lys Lys Arg Lys Arg Cys Cys Gly Tyr
130                 135         137
```


<210> 1383
<211> 90
<212>Amino acid
<213> Homo sapiens

<400> 1383

```
Pro Arg Asn Asp His Arg Leu Thr Gln Ser Arg Arg Asp Ser Ser Ser
1               5                   10                  15
Lys Thr Arg Ala Phe Leu Val Pro Arg Phe Leu Pro Ala His Ala Gly
            20                  25                  30
Val Thr Ser Glu Glu Arg Thr Ala Met Lys Arg Glu Gly Gly Ala Ala
        35                  40                  45
His Leu Cys Ser Asp Ser Leu Pro Glu Ser Gln Gln Gln Asp Gly Asn
    50                  55                  60
His Ala Pro Asn Phe Ser Ser His Gly Ser Cys Arg Arg Arg Gln Arg
65                  70                  75                  80
Arg Arg His Asp Lys Ala Leu His Ala Arg
            85                  90
```


<210> 1384
<211> 166
<212>Amino acid
<213> Homo sapiens

<400> 1384

```
Thr His Ala Ser Glu Lys Ser Arg Ala Thr Met Ser Ser Trp Ser Arg
1               5                   10                  15
```

```
Gln Arg Pro Lys Ser Pro Gly Gly Ile Gln Pro His Val Ser Arg Thr
            20                  25                  30
Leu Phe Leu Leu Leu Leu Leu Ala Ala Ser Ala Trp Gly Val Thr Leu
            35                  40                  45
Ser Pro Lys Asp Cys Gln Val Phe Arg Ser Asp His Gly Ser Ser Ile
            50                  55                  60
Ser Cys Gln Pro Pro Ala Glu Ile Pro Gly Tyr Leu Pro Ala Asp Thr
65                  70                  75                  80
Val His Leu Ala Val Glu Phe Phe Asn Leu Thr His Leu Pro Ala Asn
            85                  90                  95
Leu Leu Gln Gly Ala Ser Lys Leu Gln Glu Leu His Leu Ser Ser Asn
            100                 105                 110
Gly Leu Glu Ser Leu Ser Pro Glu Phe Leu Arg Pro Val Pro Gln Leu
            115                 120                 125
Arg Val Leu Asp Leu Thr Arg Asn Ala Leu Thr Gly Leu Pro Pro Gly
            130                 135                 140
Leu Phe Gln Ala Ser Ala Thr Leu Asp Thr Leu Val Leu Lys Glu Asn
145             150                 155                 160
Gln Leu Glu Val Leu Glu
            165 166
```

```
<210> 1385
<211> 164
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1385
Glu Arg Pro Arg Ile Met Asp Leu Ala Gly Leu Leu Lys Ser Gln Phe
1               5                   10                  15
Leu Cys His Leu Val Phe Cys Tyr Val Phe Ile Ala Ser Gly Leu Ile
            20                  25                  30
Ile Asn Thr Ile Gln Leu Phe Thr Leu Leu Leu Trp Pro Ile Asn Lys
            35                  40                  45
Gln Leu Phe Arg Lys Ile Asn Cys Arg Leu Ser Tyr Cys Ile Ser Ser
            50                  55                  60
Gln Leu Val Met Leu Leu Glu Trp Trp Ser Gly Thr Glu Cys Thr Ile
65                  70                  75                  80
Phe Thr Asp Pro Arg Ala Tyr Leu Lys Tyr Gly Lys Glu Asn Ala Ile
            85                  90                  95
Val Val Leu Asn His Lys Phe Glu Ile Asp Phe Leu Cys Gly Trp Ser
            100                 105                 110
Leu Ser Glu Arg Phe Gly Leu Leu Gly Val Ser Gln Lys Cys Ile Pro
            115                 120                 125
Pro Cys Leu Thr His Phe Phe Gly Ser Ala Pro Pro Leu Val Phe Leu
            130                 135                 140
Leu Leu Val Ile Gln Asn Leu Gln Lys Asn Gln Gln Ser Phe Tyr Leu
145             150                 155                 160
Met Lys Trp Ser
            164
```

```
<210> 1386
<211> 289
<212>Amino acid
<213> Homo sapiens
```

```
     <400> 1386
Met Ile Val Phe Gly Trp Ala Val Phe Leu Ala Ser Arg Ser Leu Gly
 1               5                  10                  15
Gln Gly Leu Leu Leu Thr Leu Glu Glu His Ile Ala His Phe Leu Gly
            20                  25                  30
Thr Gly Gly Ala Ala Thr Thr Met Gly Asn Ser Cys Ile Cys Arg Asp
        35                  40                  45
Asp Ser Gly Thr Asp Asp Ser Val Asp Thr Gln Gln Gln Gln Ala Glu
    50                  55                  60
Asn Ser Ala Val Pro Thr Ala Asp Thr Arg Ser Gln Pro Arg Asp Pro
65                  70                  75                  80
Val Arg Pro Pro Arg Arg Gly Arg Gly Pro His Glu Pro Arg Arg Lys
                85                  90                  95
Lys Gln Asn Val Asp Gly Leu Val Leu Asp Thr Leu Ala Val Ile Arg
            100                 105                 110
Thr Leu Val Asp Asn Asp Gln Glu Pro Pro Tyr Ser Met Ile Thr Leu
        115                 120                 125
His Glu Met Ala Glu Thr Asp Glu Gly Trp Leu Asp Val Val Gln Ser
    130                 135                 140
Leu Ile Arg Val Ile Pro Leu Glu Asp Pro Leu Gly Pro Ala Val Ile
145                 150                 155                 160
Thr Leu Leu Leu Asp Glu Cys Pro Leu Pro Thr Lys Asp Ala Leu Gln
                165                 170                 175
Lys Leu Thr Glu Ile Leu Asn Leu Asn Gly Glu Val Ala Cys Gln Asp
            180                 185                 190
Ser Ser His Pro Ala Lys His Arg Asn Thr Ser Ala Val Leu Gly Cys
    195                 200                 205
Leu Ala Glu Lys Leu Ala Gly Pro Ala Ser Ile Gly Leu Leu Ser Pro
210                 215                 220
Gly Ile Leu Glu Tyr Leu Leu Gln Cys Leu Leu Gln Ser His Pro Thr
225                 230                 235                 240
Val Met Leu Phe Ala Leu Ile Ala Leu Glu Lys Phe Ala Gln Thr Ser
                245                 250                 255
Glu Asn Lys Leu Thr Ile Ser Glu Ser Ser Ile Ser Asp Arg Leu Val
            260                 265                 270
Thr Leu Glu Ser Trp Ala Asn Asp Pro Asp Tyr Leu Lys Arg Gln Val
        275                 280                 285
Gly
289


        <210> 1387
        <211> 320
        <212> Amino acid
        <213> Homo sapiens




        <400> 1387
Arg Phe Gly Thr Arg Gly Leu Ala Lys Ser Lys Gly Val Val Leu Met
 1               5                  10                  15
Ala Leu Cys Ala Leu Thr Arg Ala Leu Arg Ser Leu Asn Leu Ala Pro
            20                  25                  30
Pro Thr Val Ala Ala Pro Ala Pro Ser Leu Phe Pro Ala Ala Gln Met
        35                  40                  45
Met Asn Asn Gly Leu Leu Gln Gln Pro Ser Ala Leu Met Leu Leu Pro
    50                  55                  60
Cys Arg Pro Val Leu Thr Ser Val Ala Leu Asn Ala Asn Phe Val Ser
65                  70                  75                  80
Trp Lys Ser Arg Thr Lys Tyr Thr Ile Thr Pro Val Lys Met Arg Lys
                85                  90                  95
```

864

```
Ser Gly Gly Arg Asp His Thr Gly Arg Ile Arg Val His Gly Ile Gly
        100                     105             110
Gly Gly His Lys Gln Arg Tyr Arg Met Ile Asp Phe Leu Arg Phe Arg
        115                     120             125
Pro Glu Glu Thr Lys Ser Gly Pro Phe Glu Glu Lys Val Ile Gln Val
        130                     135             140
Arg Tyr Asp Pro Cys Arg Ser Ala Asp Ile Ala Leu Val Ala Gly Gly
145                 150             155                 160
Ser Arg Lys Arg Trp Ile Ile Ala Thr Glu Asn Met Gln Ala Gly Asp
                165             170             175
Thr Ile Leu Asn Ser Asn His Ile Gly Arg Met Ala Val Ala Ala Arg
            180             185             190
Glu Gly Asp Ala His Pro Leu Gly Ala Leu Pro Val Gly Thr Leu Ile
        195             200             205
Asn Asn Val Glu Ser Glu Pro Gly Arg Gly Ala Gln Tyr Ile Arg Ala
210             215             220
Ala Gly Thr Cys Gly Val Leu Leu Arg Lys Val Asn Gly Thr Ala Ile
225             230             235                 240
Ile Gln Leu Pro Ser Lys Arg Gln Met Gln Val Leu Glu Thr Cys Val
            245             250             255
Ala Thr Val Gly Arg Val Ser Asn Val Asp His Asn Lys Arg Val Ile
        260             265             270
Gly Lys Ala Gly Arg Asn Arg Trp Leu Gly Lys Arg Pro Asn Ser Gly
        275             280             285
Arg Trp His Arg Lys Gly Gly Trp Ala Gly Arg Lys Ile Arg Pro Leu
290             295             300
Pro Pro Met Lys Ser Tyr Val Lys Leu Pro Ser Ala Ser Ala Gln Ser
305             310             315             320
```

```
<210> 1388
<211> 140
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1388
Pro Val Gln Gly Ala Arg Cys Trp Leu Asp Ala Arg Arg Asn Val Arg
1               5               10              15
Val Phe Ser Gly Val Cys Cys Gly Cys Gly Ile His Gly Tyr Trp Ala
            20              25              30
Glu Pro Cys Gly Gly Cys Gly Ala Met Glu Gly Leu Arg Ser Ser Val
        35              40              45
Glu Leu Asp Pro Glu Leu Thr Pro Gly Lys Leu Asp Glu Glu Met Val
    50              55              60
Gly Leu Pro Pro His Asp Ala Ser Pro Gln Val Thr Phe His Ser Leu
65              70              75              80
Asp Gly Lys Thr Val Val Cys Pro His Phe Met Gly Leu Leu Leu Gly
            85              90              95
Leu Leu Leu Leu Leu Thr Leu Ser Val Arg Asn Gln Leu Cys Val Arg
        100             105             110
Gly Glu Arg Gln Leu Ala Glu Thr Leu His Ser Gln Val Lys Glu Lys
        115             120             125
Ser Gln Leu Ile Gly Lys Lys Thr Asp Cys Arg Asp
    130             135             140
```

```
<210> 1389
<211> 448
```

<212>Amino acid
<213> Homo sapiens

<400> 1389
Gly Ala Arg Gly Arg Pro Leu Ala Glu Thr Trp Pro Phe Leu Thr Ala
1   5   10   15
Pro Val Leu Pro Gly Gln Leu Gln Ile Thr Glu Pro Thr Met Ala Glu
            20   25   30
Lys Gly Asp Cys Ile Ala Ser Val Tyr Gly Tyr Asp Leu Gly Gly Arg
        35   40   45
Phe Val Asp Phe Gln Pro Leu Gly Phe Gly Val Asn Gly Leu Val Leu
    50   55   60
Ser Ala Val Asp Ser Arg Ala Cys Arg Lys Val Ala Val Lys Lys Ile
65   70   75   80
Ala Leu Ser Asp Ala Arg Ser Met Lys His Ala Leu Arg Glu Ile Lys
                85   90   95
Ile Ile Arg Arg Leu Asp His Asp Asn Ile Val Lys Val Tyr Glu Val
            100   105   110
Leu Gly Pro Lys Gly Thr Asp Leu Gln Gly Glu Leu Phe Lys Phe Ser
    115   120   125
Val Ala Tyr Ile Val Gln Glu Tyr Met Glu Thr Asp Leu Ala Arg Leu
    130   135   140
Leu Glu Gln Gly Thr Leu Ala Glu Glu His Ala Lys Leu Phe Met Tyr
145   150   155   160
Gln Leu Leu Arg Gly Leu Lys Tyr Ile His Ser Ala Asn Val Leu His
                165   170   175
Arg Asp Leu Lys Pro Ala Asn Ile Phe Ile Ser Thr Glu Asp Leu Val
            180   185   190
Leu Lys Ile Gly Asp Phe Gly Leu Ala Arg Ile Val Asp Gln His Tyr
        195   200   205
Ser His Lys Gly Tyr Leu Ser Glu Gly Leu Val Thr Lys Trp Tyr Arg
    210   215   220
Ser Pro Arg Leu Leu Leu Ser Pro Asn Asn Tyr Thr Lys Ala Ile Asp
225   230   235   240
Met Trp Ala Ala Gly Cys Ile Leu Ala Glu Met Leu Thr Gly Arg Met
                245   250   255
Leu Phe Ala Gly Ala His Glu Leu Glu Gln Met Gln Leu Ile Leu Glu
                260   265   270
Thr Ile Pro Val Ile Arg Glu Glu Asp Lys Asp Glu Leu Leu Arg Val
        275   280   285
Met Pro Ser Phe Val Ser Ser Thr Trp Glu Val Lys Arg Pro Leu Arg
    290   295   300
Lys Leu Leu Pro Glu Val Asn Ser Glu Ala Ile Asp Phe Leu Glu Lys
305   310   315   320
Ile Leu Thr Phe Asn Pro Met Asp Arg Leu Thr Ala Glu Met Gly Leu
            325   330   335
Gln His Pro Tyr Met Ser Pro Tyr Ser Cys Pro Glu Asp Glu Pro Thr
            340   345   350
Ser Gln His Pro Phe Arg Ile Glu Asp Glu Ile Asp Asp Ile Val Leu
    355   360   365
Met Ala Ala Asn Gln Ser Gln Leu Ser Asn Trp Asp Thr Cys Ser Ser
370   375   380
Arg Tyr Pro Val Ser Leu Ser Ser Asp Leu Glu Trp Arg Pro Asp Arg
385   390   395   400
Cys Gln Asp Ala Ser Glu Val Gln Arg Asp Pro Arg Ala Gly Ser Ala
            405   410   415
Pro Leu Ala Glu Asn Val Gln Val Asp Pro Arg Lys Asp Ser His Ser
            420   425   430
Ser Ser Ala Ser Cys Gln Ala Gly Arg Asn Gly Val Ser Arg Tyr Gln
        435   440   445   448

```
        <210> 1390
        <211> 815
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1390
Met Arg Thr Leu Gly Thr Cys Leu Ala Thr Leu Ala Gly Leu Leu Leu
1               5                   10                  15
Thr Ala Ala Gly Glu Thr Phe Ser Gly Gly Cys Leu Phe Asp Glu Pro
            20                  25                  30
Tyr Ser Thr Cys Gly Tyr Ser Gln Ser Glu Gly Asp Asp Phe Asn Trp
        35                  40                  45
Glu Gln Val Asn Thr Leu Thr Lys Pro Thr Ser Asp Pro Trp Met Pro
    50                  55                  60
Ser Gly Ser Phe Met Leu Val Asn Ala Ser Gly Arg Pro Glu Gly Gln
65                  70                  75                  80
Arg Ala His Leu Leu Leu Pro Gln Leu Lys Glu Asn Asp Thr His Cys
            85                  90                  95
Ile Asp Phe His Tyr Phe Val Ser Ser Lys Ser Asn Ser Pro Pro Gly
            100                 105                 110
Leu Leu Asn Val Tyr Val Lys Val Asn Asn Gly Pro Leu Gly Asn Pro
        115                 120                 125
Ile Trp Asn Ile Ser Gly Asp Pro Thr Arg Thr Trp Asn Arg Ala Glu
    130                 135                 140
Leu Ala Ile Ser Thr Phe Trp Pro Asn Phe Tyr Gln Val Ile Phe Glu
145                 150                 155                 160
Val Ile Thr Ser Gly His Gln Gly Tyr Leu Ala Ile Asp Glu Val Lys
            165                 170                 175
Val Leu Gly His Pro Cys Thr Arg Thr Pro His Phe Leu Arg Ile Gln
            180                 185                 190
Asn Val Glu Val Asn Ala Gly Gln Phe Ala Thr Phe Gln Cys Ser Ala
        195                 200                 205
Ile Gly Arg Thr Val Ala Gly Asp Arg Leu Trp Leu Gln Gly Ile Asp
    210                 215                 220
Val Arg Asp Ala Pro Leu Lys Glu Ile Lys Val Thr Ser Ser Arg Arg
225                 230                 235                 240
Phe Ile Ala Ser Phe Asn Val Val Asn Thr Thr Lys Arg Asp Ala Gly
            245                 250                 255
Lys Tyr Arg Cys Met Ile Arg Thr Glu Gly Gly Val Gly Ile Ser Asn
            260                 265                 270
Tyr Ala Glu Leu Val Val Lys Glu Pro Pro Val Pro Ile Ala Pro Pro
        275                 280                 285
Gln Leu Ala Ser Val Gly Ala Thr Tyr Leu Trp Ile Gln Leu Asn Ala
    290                 295                 300
Asn Ser Ile Asn Gly Asp Gly Pro Ile Val Ala Arg Glu Val Glu Tyr
305                 310                 315                 320
Cys Thr Ala Ser Gly Ser Trp Asn Asp Arg Gln Pro Val Asp Ser Thr
            325                 330                 335
Ser Tyr Lys Ile Gly His Leu Asp Pro Asp Thr Glu Tyr Glu Ile Ser
            340                 345                 350
Val Leu Leu Thr Arg Pro Gly Glu Gly Gly Thr Gly Ser Pro Gly Pro
        355                 360                 365
Ala Leu Arg Thr Arg Thr Lys Cys Ala Asp Pro Met Arg Gly Pro Arg
    370                 375                 380
Lys Leu Glu Val Val Glu Val Lys Ser Arg Gln Ile Thr Ile Arg Trp
385                 390                 395                 400
```

```
Glu Pro Phe Gly Tyr Asn Val Thr Arg Cys His Ser Tyr Asn Leu Thr
             405                     410                 415
Val His Tyr Cys Tyr Gln Val Gly Gly Gln Glu Gln Val Arg Glu Glu
             420                 425                 430
Val Ser Trp Asp Thr Glu Asn Ser His Pro Gln His Thr Ile Thr Asn
             435                 440                 445  .
Leu Ser Pro Tyr Thr Asn Val Ser Val Lys Leu Ile Leu Met Asn Pro
    450                 455       .           460
Glu Gly Arg Lys Glu Ser Gln Glu Leu Ile Val Gln Thr Asp Glu Asp
465                 470                 475                 480
Leu Pro Gly Ala Val Pro Thr Glu Ser Ile Gln Gly Ser Thr Phe Glu
             485                 490                 495
Glu Lys Ile Phe Leu Gln Trp Arg Glu Pro Thr Gln Thr Tyr Gly Val
             500             .   505                 510
Ile Thr Leu Tyr Glu Ile Thr Tyr Lys Ala Val Ser Ser Phe Asp Pro
    .   515                 520                 525
Glu Ile Asp Leu Ser Asn Gln Ser Gly Arg Val Ser Lys Leu Gly Asn
    530                 535                 540
Glu Thr His Phe Leu Phe Phe Gly Leu Tyr Pro Gly Thr Thr Tyr Ser
.545                 550                 555                 560
Phe Thr Ile Arg Ala Ser Thr Ala Lys Gly Phe Gly Pro Pro Ala Thr
    .            565                 570                 575
Asn Gln Phe Thr Thr Lys Ile Ser Ala Pro Ser Met Pro Ala Tyr Glu
             580                 585                 590
Leu Glu Thr Pro Leu Asn Gln Thr Asp Asn Thr Val Thr Val Met Leu
    .        595                 600                 605
Lys Pro Ala His Ser Arg Gly Ala Pro Val Ser Val Tyr Gln Ile Val
    610                 615                 620
Val Glu Glu Glu Arg Pro Arg Arg Thr Lys Lys Thr Thr Glu Ile Leu
625                 630                 635                 640
Lys Cys Tyr Pro Val Pro Ile His Phe Gln Asn Ala Ser Leu Leu Asn
             645                 650                 655
Ser Gln Tyr Tyr Phe Ala Ala Glu Phe Pro Ala Asp Ser Leu Gln Ala
             660                 665                 670       .
Ala Gln Pro Phe Thr Ile Gly Asp Asn Lys Thr Tyr Asn Gly Tyr Trp
    675                 680                 685
Asn Thr Pro Leu Leu Pro Tyr Lys Ser Tyr Arg Ile Tyr Phe Gln Ala
    690         .           695                 700
.Ala Ser Arg Ala Asn Gly Glu Thr Lys Ile Asp Cys Val Gln Val Ala
705                 710                 715                 720
Thr Lys Gly Ala Ala Thr Pro Lys Pro Val Pro Glu Pro Glu Lys Gln
             725 -                730                 735
Thr Asp His Thr Val Lys Ile Ala Gly Val Ile Ala Gly Ile Leu Leu
             740                 745                 750
Phe Val Ile Ile Phe Leu Gly Val Val Leu Val Met Lys Lys Arg Leu
    755                 760                 765
Tyr Lys His Gly Ala Ser Ile Cys Ser Ala Ser Gly Glu Ala Ser Gly '
    770                 775                 780
Ser Phe Gln Ser Trp Arg Lys Ala Lys His Lys Gln Ala Cys Pro Met
785                 790                 795                 800
Ala Arg Ala Gly Ala Arg Glu Arg Ala Gly Gly Cys Leu Lys Leu
             805                 810             .   815
```

```
<210> 1391
<211> 142
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1391
```

```
Gly Ile Arg Gln Leu Leu Gln Leu Ser Arg Ala Ser Met Ala Ala Arg
1             5                   10                  15
Lys Ser Trp Thr Ala Leu Arg Leu Cys Ala Thr Val Val Val Leu Asp
            20                  25                  30
Met Val Val Cys Lys Gly Phe Val Gln Asp Leu Asp Glu Ser Phe Lys
        35                  40                  45
Glu Asn Arg Asn Asp Asp Ile Trp Leu Val His Phe Tyr Ala Pro Trp
    50                  55                  60
Cys Gly His Cys Lys Lys Leu Glu Pro Ile Trp Asn Glu Ala Gly Leu
65                  70                  75                  80
Glu Met Lys Ser Ile Gly Ser Pro Val Lys Ala Gly Lys Met Asp Ala
            85                  90                  95
Thr Ser Tyr Ser Ser Ile Ala Ser Glu Phe Gly Val Arg Gly Tyr Pro
            100                 105                 110
Thr Ile Lys Leu Ala Leu Ile Arg Pro Leu Pro Ser Gln Gln Met Phe
        115                 120                 125
Glu His Met His Lys Arg His Arg Val Phe Phe Val Tyr Val
    130                 135                 140 142
```

```
<210> 1392
<211> 282
<212> Amino acid
<213> Homo sapiens
```

```
<400> 1392
Gly Leu Val Ile Val Ile Ser His Phe Ser Pro Ser Pro Gly Leu Leu
1             5                   10                  15
Pro Ala Thr Gln Ser Pro Ala Met Ser Asp Pro Ile Thr Leu Asn Val
            20                  25                  30
Gly Gly Lys Leu Tyr Thr Thr Ser Leu Ala Thr Leu Thr Ser Phe Pro
        35                  40                  45
Asp Ser Met Leu Gly Ala Met Phe Ser Gly Lys Met Pro Thr Lys Arg
    50                  55                  60
Asp Ser Gln Gly Asn Cys Phe Ile Asp Arg Asp Gly Lys Val Phe Arg
65                  70                  75                  80
Tyr Ile Leu Asn Phe Leu Arg Thr Ser His Leu Asp Leu Pro Glu Asp
            85                  90                  95
Phe Gln Glu Met Gly Leu Leu Arg Arg Glu Ala Asp Phe Tyr Gln Val
            100                 105                 110
Gln Pro Leu Ile Glu Ala Leu Gln Glu Lys Glu Val Glu Leu Ser Lys
        115                 120                 125
Ala Glu Lys Asn Ala Met Leu Asn Ile Thr Leu Asn Gln Arg Val Gln
    130                 135                 140
Thr Val His Phe Thr Val Arg Glu Ala Pro Gln Ile Tyr Ser Leu Ser
145                 150                 155                 160
Ser Ser Ser Met Glu Val Phe Asn Ala Asn Ile Phe Ser Thr Ser Cys
            165                 170                 175
Leu Phe Leu Lys Leu Leu Gly Ser Lys Leu Phe Tyr Cys Ser Asn Gly
        180                 185                 190
Asn Leu Ser Ser Ile Thr Ser His Leu Gln Asp Pro Asn His Leu Thr
    195                 200                 205
Leu Asp Trp Val Ala Asn Val Glu Gly Leu Pro Glu Glu Glu Tyr Thr
    210                 215                 220
Lys Gln Asn Leu Lys Arg Leu Trp Val Val Pro Ala Asn Lys Gln Ile
225                 230                 235                 240
Asn Ser Phe Gln Val Phe Val Glu Glu Val Leu Lys Ile Ala Leu Ser
            245                 250                 255
Asp Gly Phe Cys Ile Asp Ser Ser His Pro His Ala Leu Asp Phe Met
        260                 265                 270
```

<210> 1393
<211> 308
<212> Amino acid
<213> Homo sapiens

<400> 1393

```
Ser Cys Ala Asp Asn Leu Val Ala Ala Ser Gly Gly Cys Trp Phe Val
 1               5                  10                  15
Leu Gly Glu Arg Arg Ala Gly Ser Leu Leu Ser Ala Ser Tyr Gly Thr
                20                  25                  30
Phe Ala Met Pro Gly Met Val Leu Phe Gly Arg Arg Trp Ala Ile Ala
            35                  40                  45
Ser Asp Asp Leu Val Phe Pro Gly Phe Phe Glu Leu Val Val Arg Val
        50                  55                  60
Leu Trp Trp Ile Gly Ile Leu Thr Leu Tyr Leu Met His Arg Gly Lys
65                  70                  75                  80
Leu Asp Cys Ala Gly Gly Ala Leu Leu Ser Ser Tyr Leu Ile Val Leu
                85                  90                  95
Met Ile Leu Leu Ala Val Val Ile Cys Thr Val Ser Ala Ile Met Cys
            100                 105                 110
Val Ser Met Arg Gly Thr Ile Cys Asn Pro Gly Pro Arg Lys Ser Met
        115                 120                 125
Ser Lys Leu Leu Tyr Ile Arg Leu Ala Leu Phe Phe Pro Glu Met Val
    130                 135                 140
Trp Ala Ser Leu Gly Ala Ala Trp Val Ala Asp Gly Val Gln Cys Asp
145                 150                 155                 160
Arg Thr Val Val Asn Gly Ile Ile Ala Thr Val Val Val Ser Trp Ile
                165                 170                 175
Ile Ile Ala Ala Thr Val Val Ser Ile Ile Ile Val Phe Asp Pro Leu
            180                 185                 190
Gly Gly Lys Met Ala Pro Tyr Ser Ser Ala Gly Pro Ser His Leu Asp
        195                 200                 205
Ser His Asp Ser Ser Gln Leu Leu Asn Gly Leu Lys Thr Ala Ala Thr
    210                 215                 220
Ser Val Trp Glu Thr Arg Ile Lys Leu Leu Cys Cys Cys Ile Gly Lys
225                 230                 235                 240
Asp Asp His Thr Arg Val Ala Phe Ser Ser Thr Ala Glu Leu Phe Ser
                245                 250                 255
Thr Tyr Phe Ser Asp Thr Asp Leu Val Pro Ser Asp Ile Ala Ala Gly
                260                 265                 270
Leu Ala Leu Leu His Gln Gln Gln Asp Asn Ile Arg Asn Asn Gln Asp
        275                 280                 285
Leu Pro Arg Trp Ser Ala Met Pro Gln Gly Ala Pro Arg Lys Leu Ile
    290                 295                 300
Trp Met Gln Asn
305             308
```


<210> 1394
<211> 238
<212> Amino acid
<213> Homo sapiens

<400> 1394

```
Phe Arg Ala Ala Thr Ala Ala Ala Lys Gly Asn Gly Gly Gly Gly Gly
1               5                   10                  15
Arg Ala Gly Ala Gly Asp Ala Ser Gly Thr Arg Lys Lys Lys Gly Pro
            20                  25                  30
Gly Pro Leu Ala Thr Ala Tyr Leu Val Ile Tyr Asn Val Val Met Thr
        35                  40                  45
Ala Gly Trp Leu Val Ile Ala Val Gly Leu Val Arg Ala Tyr Leu Ala
    50                  55                  60
Lys Gly Ser Tyr His Ser Leu Tyr Tyr Ser Ile Glu Lys Pro Leu Lys
65                  70                  75                  80
Phe Phe Gln Thr Gly Ala Leu Leu Glu Ile Leu His Cys Ala Ile Gly
                85                  90                  95
Ile Val Pro Ser Ser Val Val Leu Thr Ser Phe Gln Val Met Ser Arg
            100                 105                 110
Val Phe Leu Ile Trp Ala Val Thr His Ser Val Lys Glu Val Gln Ser
        115                 120                 125
Glu Asp Ser Val Leu Phe Val Ile Ala Trp Thr Ile Thr Glu Ile Ile
    130                 135                 140
Arg Tyr Ser Phe Tyr Thr Phe Ser Leu Leu Asn His Leu Pro Tyr Leu
145                 150                 155                 160
Ile Lys Arg Ala Arg Tyr Thr Leu Phe Ile Val Leu Tyr Pro Met Gly
                165                 170                 175
Val Ser Gly Glu Leu Leu Thr Ile Tyr Ala Ala Leu Pro Phe Val Arg
            180                 185                 190
Gln Ala Gly Leu Tyr Ser Ile Ser Leu Pro Asn Ser Thr Lys Lys Ile
        195                 200                 205
Phe Leu Ile Ser Gln Val Trp Trp His Met Leu Ala Val Ser Ala Asp
    210                 215                 220
Ala Lys Ala Ala Glu Met Pro Ala Val Leu Lys Pro Gly Pro
225                 230                 235     238
```

<210> 1395
<211> 231
<212>Amino acid
<213> Homo sapiens

<400> 1395

```
Met Leu Thr Gly Val Gly Cys Leu Val Ser Ser Glu Ser Leu Ser Cys
1               5                   10                  15
Val Gln Cys Asn Ser Trp Glu Lys Ser Cys Val Asn Ser Ile Ala Ser
            20                  25                  30
Glu Cys Pro Ser His Ala Asn Thr Ser Cys Ile Ser Ser Ser Ala Ser
        35                  40                  45
Ser Ser Leu Glu Thr Pro Val Arg Leu Tyr Gln Asn Met Phe Cys Ser
    50                  55                  60
Ala Glu Asn Cys Ser Glu Glu Thr His Ile Thr Ala Phe Thr Val His
65                  70                  75                  80
Val Ser Ala Glu Glu His Phe His Phe Val Ser Gln Cys Cys Glu Gly
                85                  90                  95
Lys Glu Cys Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn
            100                 105                 110
Val Ser Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr
        115                 120                 125
Ser Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu Gln Cys Val
    130                 135                 140
Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys Ser Leu Val
145                 150                 155                 160
```

```
Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln Phe Leu Ser
             165                 170                 175
Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys Phe Glu Cys
             180                 185                 190
Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro Thr Thr Ser His
             195                 200                 205
Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu Ala Leu Ala Ser Leu
    210                 215                 220
Leu Leu Arg Gly Leu Leu Pro
225                 230 231
```

```
<210> 1396
<211> 216
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1396
Val Pro Ala Arg Arg Arg Ala Met Glu Ile Gly Thr Glu Ile Ser Arg
1             5                 10                  15
Lys Ile Arg Ser Ala Ile Lys Gly Lys Leu Gln Glu Leu Gly Ala Tyr
             20                25                  30
Val Asp Glu Glu Leu Pro Asp Tyr Ile Met Val Met Val Ala Asn Lys
         35                40                  45
Lys Ser Gln Asp Gln Met Thr Glu Asp Leu Ser Leu Phe Leu Gly Asn
    50                 55                 60
Asn Thr Ile Arg Phe Thr Val Trp Leu His Gly Val Leu Asp Lys Leu
65                 70                 75                  80
Arg Ser Val Thr Thr Glu Pro Ser Ser Leu Lys Ser Ser Asp Thr Asn
             85                90                  95
Ile Phe Asp Ser Asn Val Pro Ser Asn Lys Ser Asn Phe Ser Arg Gly
             100               105               110
Asp Glu Arg Arg His Glu Ala Ala Val Pro Pro Leu Ala Ile Pro Ser
         115               120               125
Ala Arg Pro Glu Lys Arg Asp Ser Arg Val Ser Thr Ser Ser Gln Glu
    130               135               140
Ser Lys Thr Thr Asn Val Arg Gln Thr Tyr Asp Asp Gly Ala Ala Thr
145               150               155               160
Arg Leu Met Ser Thr Val Lys Pro Leu Arg Glu Pro Ala Pro Ser Glu
             165               170               175
Asp Val Ile Asp Ile Lys Pro Glu Pro Asp Asp Leu Ile Asp Glu Asp
             180               185               190
Leu Asn Phe Val Gln Glu Lys Pro Leu Ser Gln Lys Lys Pro Thr Val
         195               200               205
Thr Leu Thr Tyr Gly Ser Ser Arg
    210               215 216
```

```
<210> 1397
<211> 135
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1397
Ala Ser Arg Val Leu Ala Ala Val Met Gly Leu Pro Trp Gly Gln Pro
1             5                 10                  15
```

```
        His Leu Gly Leu Gln Met Leu Leu Leu Ala Leu Asn Trp Leu Arg Pro
                     20                  25                  30
        Ser Leu Ser Leu Glu Leu Val Pro Tyr Thr Pro Gln Ile Thr Ala Trp
                 35                  40                  45
        Asp Leu Glu Gly Lys Val Thr Ala Thr Thr Phe Ser Leu Glu Gln Pro
            50                  55                  60
        Arg Cys Val Phe Asp Gly Leu Ala Ser Ala Ser Asp Thr Val Trp Leu
        65                  70                  75                  80
        Val Val Ala Phe Ser Asn Ala Ser Arg Gly Phe Gln Asn Pro Glu Thr
                         85                  90                  95
        Leu Ala Asp Ile Pro Ala Ser Pro Gln Leu Leu Thr Asp Gly His Tyr
                    100                 105                 110
        Met Thr Leu Pro Leu Ser Pro Asp Gln Leu Pro Cys Gly Asp Pro Met
                    115                 120                 125
        Ala Gly Ser Gly Ser Ala Pro
            130                 135
```

```
        <210> 1398
        <211> 41
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1398
        Asn Ser Leu Asn Asn Phe Phe Phe Glu Thr Glu Ser Cys Cys Val Ala
        1                   5                   10                  15
        Gln Ala Gly Val Gln Trp Arg Asp Leu Gly Ser Leu Gln Ala Pro Pro
                     20                  25                  30
        Pro Gly Phe Lys Arg Phe Ser Cys Leu
                 35                  40  41
```

```
        <210> 1399
        <211> 151
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1399
        Lys Ser Leu Pro Leu Gln Lys His Pro Lys Pro Ser Cys Gln Glu Asp
        1                   5                   10                  15
        Gln Gly Leu Gly Arg Gly Ser Leu Ser Gly His Ser Pro Leu Thr Leu
                     20                  25                  30
        Leu Thr Phe Leu Thr Ser Cys Ala Leu Gly Asp Gln Gln Leu Leu Pro
                 35                  40                  45
        Pro Arg Thr Ser Gly Ser Leu Cys Gln Glu Ser Met Ser Glu Gln Ser
            50                  55                  60
        Cys Gln Met Ser Glu Leu Arg Leu Leu Leu Leu Gly Lys Cys Arg Ser
        65                  70                  75                  80
        Gly Lys Ser Ala Thr Gly Asn Ala Ile Leu Gly Lys His Val Phe Lys
                         85                  90                  95
        Ser Lys Phe Ser Asp Gln Thr Val Ile Lys Met Cys Gln Arg Glu Ser
                    100                 105                 110
        Trp Val Leu Arg Glu Arg Lys Val Val Val Ile Asp Thr Pro Asp Leu
                    115                 120                 125
        Phe Ser Ser Ile Ala Cys Ala Glu Asp Lys Gln Arg Asn Ile Gln His
            130                 135                 140
```

Leu Leu Glu Leu Ser Ala Pro
145   150 151

        <210> 1400
        <211> 324
        <212>Amino acid
        <213> Homo sapiens

        <400> 1400
Phe Val Glu Thr Thr Val Ser Val Gln Ser Ala Glu Ser Ser Asp Ala
 1   5   10   15
Leu Ser Trp Ser Arg Leu Pro Arg Ala Leu Ala Ser Val Gly Pro Glu
            20   25   30
Glu Ala Arg Ser Gly Ala Pro Val Gly Gly Gly Arg Trp Gln Leu Ser
        35   40   45
Asp Arg Val Glu Gly Gly Ser Pro Thr Leu Gly Leu Leu Gly Gly Ser
    50   55   60
Pro Ser Ala Gln Pro Gly Thr Gly Asn Val Glu Ala Gly Ile Pro Ser
65   70   75   80
Gly Arg Met Leu Glu Pro Leu Pro Cys Trp Asp Ala Ala Lys Asp Leu
            85   90   95
Lys Glu Pro Gln Cys Pro Pro Gly Asp Arg Val Gly Val Gln Pro Gly
            100   105   110
Asn Ser Arg Val Trp Gln Gly Thr Met Glu Lys Ala Gly Leu Ala Trp
    115   120   125
Thr Arg Gly Thr Gly Val Gln Ser Glu Gly Thr Trp Glu Ser Gln Arg
    130   135   140
Gln Asp Ser Asp Ala Leu Pro Ser Pro Glu Leu Leu Pro Gln Asp Gln
145   150   155   160
Asp Lys Pro Phe Leu Arg Lys Ala Cys Ser Pro Ser Asn Ile Pro Ala
            165   170   175
Val Ile Ile Thr Asp Met Gly Thr Gln Glu Asp Gly Ala Leu Glu Glu
            180   185   190
Thr Gln Gly Ser Pro Arg Gly Asn Leu Pro Leu Arg Lys Leu Ser Ser
    195   200   205
Ser Ser Ala Ser Ser Thr Gly Phe Ser Ser Ser Tyr Glu Asp Ser Glu
210   215   220
Glu Asp Ile Ser Ser Asp Pro Glu Arg Thr Leu Asp Pro Asn Ser Ala
225   230   235   240
Phe Leu His Thr Leu Asp Gln Gln Lys Pro Arg Val Val Glu Ser Arg
            245   250   255
Ser Val Thr Gln Ala Gly Val Gln Trp His Asp Ile Gly Ser Leu Gln
            260   265   270
Pro Leu Pro Pro Trp Ile Gln Ala Ile Leu His Ala Ser Ala Phe Arg
    275   280   285
Ile Ala Gly Thr Thr Gly Ala Cys His His Ala Arg Ile Ile Phe Gly
    290   295   300
Phe Leu Val Glu Arg Gly Phe His His Val Gly Gln Asp Gly Leu Tyr
305   310   315   320
Leu Leu Ile Leu
        324

        <210> 1401
        <211> 76
        <212>Amino acid
        <213> Homo sapiens

        <220>

```
        <221> misc_feature
        <222> (1)...(76)
        <223> X = any amino acid or stop code




        <400> 1401
Lys Ile Cys Ser Ser Tyr Phe Leu Arg Ile Ile Cys Ile Leu Gln Lys
 1           5                  10                  15
Glu Ala Gln Glu Ala Ser Asn Leu Tyr Thr Ser Cys Asp Phe Phe Ser
             20                  25                  30
Pro Ala Phe Tyr Phe Val Ile Tyr Arg Leu Tyr Asn Phe Lys Ile His
         35                  40                  45
Trp Pro Gly Ala Val Ala His Thr Tyr Ser Pro Ser Thr Leu Gly Gly
     50                  55                  60
Arg Gly Arg Trp Val Thr Xaa Gly Arg Glu Phe Met
 65                  70                  75  76


        <210> 1402
        <211> 102
        <212>Amino acid
        <213> Homo sapiens




        <400> 1402
Leu Ile Leu Ser Leu Pro Leu Leu Tyr Gly His Leu Lys Ser Tyr Thr
 1           5                  10                  15
Phe Pro Ser Glu His Tyr Leu His Leu Leu Gln Thr Phe Ala Thr Phe
             20                  25                  30
Asn Lys Tyr Leu Asn Val Cys Val Leu Ile Phe Ile His His Lys Pro
         35                  40                  45
Val Val Pro Ala Ile Gln Gly Thr Asn Val Gly Gly Ser Leu Glu Pro
     50                  55                  60
Arg Arg Leu Arg Leu Gln Gln Ala Met Ile Val Pro Leu His Phe Gly
 65                  70                  75                  80
Leu Gly Asn Arg Val Arg Pro Cys Leu Lys Lys Gln Gln Gln Gln Gln
                 85                  90                  95
Gln Gln Gln Gln Lys Lys
                100     102


        <210> 1403
        <211> 124
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(124)
        <223> X = any amino acid or stop code




        <400> 1403
Arg Met Glu Thr Lys Pro Val Ile Thr Cys Leu Lys Thr Leu Leu Ile
 1           5                  10                  15
```

```
Ile Tyr Ser Phe Val Phe Trp Ile Thr Gly Val Ile Leu Leu Ala Ala
             20                  25                  30
Gly Val Trp Gly Lys Leu Thr Leu Gly Ser Tyr Ile Ser Leu Ile Ala
         35                  40                  45
Glu Asn Ser Thr Tyr Ala Pro Tyr Val Leu Ile Val Thr Gly Thr Thr
     50                  55                  60
Ile Val Ala Tyr Pro Leu Val Xaa Phe Phe Phe Ser Tyr Ser Ser Gly
65                  70                  75                  80
Phe Ser Tyr Ile Leu Ala Val Arg Leu Ile Ala Gly Ile Ala Leu Val
                 85                  90                  95
Tyr Asn Tyr Ile Pro Arg Ser Ser Ser Arg Ala Leu Val Arg Leu Val
             100                 105                 110
Val Leu Leu Arg Phe Leu Leu Ser Arg His Pro Ser
         115                 120             124
```

```
<210> 1404
<211> 136
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(136)
<223> X = any amino acid or stop code
```

```
<400> 1404
Asn Ala Glu His Pro Gly Met Asp Arg His Asp Leu Cys Gln Lys Ala
1               5                   10                  15
Lys Leu Ala Glu His Ala Glu Arg Asp Asp Asp Met Ala Ala Cys Met
             20                  25                  30
Lys Thr Val Thr Asp Gln Gly Ala Glu Leu Ser Asn Glu Glu Arg Asn
         35                  40                  45
Leu Leu Ser Asp Ala His Thr Asn Ala Val Xaa Ala Arg Arg Ser Ser
     50                  55                  60
Trp Met Gly Ala Xaa Arg Ile Glu Gln Lys Thr Glu Gly Ala Asp Thr
65                  70                  75                  80
Gln Gln Gln Met Ala Pro Asp Cys Arg Glu Ile Phe Ala Thr Glu Leu
             85                  90                  95
Arg Asp Ile Cys Asp Asp Val Leu Ser Leu Leu Glu Lys Leu Leu Ile
             100                 105                 110
Pro Asn Ala Ser His Ala Xaa Ser Leu Val Tyr Tyr Leu His Met Ile
     115                 120                 125
Gly Asp Tyr Tyr Arg Tyr Trp Leu
130                 135 136
```

```
<210> 1405
<211> 110
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(110)
<223> X = any amino acid or stop code
```

MISSING AT THE TIME OF PUBLICATION

```
Gly Asn Asp Tyr Ser Leu Gly Leu Thr Pro Thr Gly Val Leu Val Phe
                 85                  90                  95
Glu Gly Asp Thr Lys Ile Gly Leu Phe Phe Trp Pro Lys Ile Thr Arg
            100                 105                 110
Leu Asp Phe Lys Lys Asn Lys Leu Thr Leu Val Val Val Glu Asp Asp
        115                 120                 125
Asp Gln Gly Lys Glu Gln Glu His Thr Phe Val Phe Arg Leu Asp His
    130                 135                 140
Pro Lys Ala Cys Lys His Leu Trp Lys Cys Ala Val Glu His His Ala
145                 150                 155                 160
Phe Phe Arg Leu Arg Gly Pro Val Gln Lys Ser Ser His Arg Ser Gly
                165                 170                 175
Phe Ile Arg Leu Gly Ser Arg Phe Arg Tyr Ser Gly Lys Thr Glu Tyr
                180                 185                 190
Gln Thr Thr Lys Thr Asn Lys Ala Arg Arg Ser Thr Ser Phe Glu Arg
        195                 200                 205
Arg Pro Ser Lys Arg Tyr Ser Arg Arg Thr Leu Gln Met Lys Ala Cys
    210                 215                 220
Ala Thr Lys Pro Glu Glu Leu Ser Val His Asn Asn Val Ser Thr Gln
225                 230                 235                 240
Ser Asn Gly Ser Gln Gln Ala Trp Gly Met Arg Ser Ala Leu Pro Val
                245                 250                 255
Ser Pro Ser Ile Ser Ser Ala Pro Val Pro Val Glu Ile Glu Asn Leu
            260                 265                 270
Pro Gln Ser Pro Gly Thr Asp Gln His Asp Arg Lys Trp Leu Ser Ala
        275                 280                 285
Ala Ser Asp Cys Cys Gln Arg Gly Gly Asn Gln Trp Asn Thr Arg Ala
290                 295                 300
Leu
305
```

```
        <210> 1408
        <211> 92
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(92)
        <223> X = any amino acid or stop code
```

```
        <400> 1408
Ala Thr Ala Pro Gly Leu Phe Asn Phe Phe Xaa Phe Leu Phe Gln Cys
 1               5                   10                  15
Arg Glu Glu His Lys Lys Lys Asn Pro Glu Val Pro Val Asn Phe Ala
            20                  25                  30
Glu Phe Ser Lys Lys Cys Ser Gly Arg Trp Lys Thr Met Ser Ser Lys
        35                  40                  45
Glu Lys Phe Lys Phe Gly Glu Met Ala Lys Ala Asp Glu Val Cys Tyr
    50                  55                  60
Asp Arg Glu Met Lys Asp Tyr Gly Pro Ala Lys Gly Gly Lys Lys Lys
65                  70                  75                  80
Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Gly Phe
                85                  90      92
```

```
        <210> 1409
        <211> 169
        <212>Amino acid
```

```
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(169)
        <223> X = any amino acid or stop code
```

```
        <400> 1409
Ala Glu Gly Leu Gly Ser Trp Ala Val Trp Ala Gly Leu Gly Trp Ala
1               5                   10                  15
Gly Arg His Met Glu Ala Gly Gly Ala Thr Gly Ala Leu Gly Val Gly
            20              25                  30
Ser Lys Leu Pro Ser Ala Phe Cys Phe Pro Gly Ser Ser Val Ala Met
        35                  40                  45
Asp Met Phe Gln Lys Val Glu Lys Ile Gly Glu Gly Thr Tyr Gly Val
    50                  55                  60
Val Tyr Lys Ala Lys Asn Arg Glu Thr Gly Gln Leu Val Ala Leu Lys
65                  70                  75                  80
Lys Ile Arg Leu Asp Leu Xaa Val Leu Gly Arg Pro Leu Ser Tyr Pro
                85                  90                  95
Pro Trp Ala Ile Thr Thr Trp Ala Leu Pro Asp Pro Phe Pro Leu Ser
            100                 105                 110
Trp Ser Pro Arg Leu Thr Pro Leu Gly Ala Ala Gln Gln Pro Leu Pro
        115                 120                 125
Val Leu Ser Pro Val His Cys Leu Leu Thr Ser Leu Cys Arg Gly Pro
    130                 135                 140
Asp Cys Gly Val Trp Trp Met Thr Cys Gln Gly Ala Gln Val Ser Ile
145                 150                 155                 160
Ala Gly Ala Leu Val Ile Leu Trp Gly
            165                 169
```

```
        <210> 1410
        <211> 146
        <212> Amino acid
        <213> Homo sapiens
```

```
        <400> 1410
Leu Cys Val Ser Val Leu Cys Ser Phe Ser Tyr Leu Gln Asn Gly Trp
1               5                   10                  15
Thr Ala Ser Asp Pro Val His Gly Tyr Trp Phe Arg Ala Gly Asp His
            20                  25                  30
Val Ser Arg Asn Ile Pro Val Ala Thr Asn Asn Pro Val Arg Ala Val
        35                  40                  45
Gln Glu Glu Thr Arg Asp Arg Phe His Leu Leu Gly Asp Pro Gln Asn
    50                  55                  60
Lys Asp Cys Thr Leu Ser Ile Arg Asp Thr Arg Glu Ser Asp Ala Gly
65                  70                  75                  80
Thr Tyr Val Phe Cys Val Glu Arg Gly Asn Met Lys Trp Asn Tyr Lys
                85                  90                  95
Tyr Asp Gln Leu Ser Val Asn Val Thr Ala Ser Gln Asp Leu Leu Ser
            100                 105                 110
Arg Tyr Arg Leu Glu Val Pro Glu Ser Val Thr Val Gln Glu Gly Leu
        115                 120                 125
Cys Val Ser Val Pro Trp Gln Cys Pro Leu Pro Pro Leu Gln Leu Asp
    130                 135                 140
```

Cys Leu
145 146

<210> 1411
<211> 250
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(250)
<223> X = any amino acid or stop code

<400> 1411

```
Gln Leu Gln Leu Cys Gln Asn Cys Thr Lys Arg Gly Glu Cys His Cys
 1           5                   10                  15
Val Pro Phe Asp Thr Tyr Ile Lys Thr Lys Lys Glu Lys Lys Arg Leu
            20              25              30
Ser Val Leu Pro Pro Thr Arg Leu Met Glu Ala Arg Phe Ser Pro Ile
        35              40              45
Asn Gln Ile Leu Pro Trp Cys Arg Gln Asp Leu Ala Ile Ser Ile Ser
    50              55              60
Lys Ala Ile Asn Thr Gln Glu Ala Pro Val Lys Glu Lys His Ala Arg
65              70              75              80
Arg Ile Ile Leu Gly Thr His His Glu Lys Gly Ala Phe Thr Phe Trp
            85              90              95
Ser Tyr Ala Ile Gly Leu Pro Leu Pro Ser Ser Ser Ile Leu Ser Trp
        100             105             110
Lys Phe Cys His Val Leu His Lys Val Leu Arg Asp Gly His Pro Asn
    115             120             125
Val Leu His Asp Cys Gln Arg Tyr Arg Ser Asn Ile Arg Glu Ile Gly
130             135             140
Asp Leu Trp Gly His Leu His Asp Arg Tyr Gly Gln Leu Val Asn Val
145             150             155             160
Tyr Thr Lys Leu Leu Leu Thr Lys Ile Ser Phe His Leu Lys His Pro
            165             170             175
Gln Phe Pro Ala Gly Leu Glu Val Thr Asp Glu Val Leu Glu Lys Ala
            180             185             190
Ala Gly Thr Asp Val Asn Asn Met Xaa Val Thr Leu His Gly Tyr Met
        195             200             205
Ala Ser Ser Pro Arg Leu Pro His Ser Phe Leu Pro Arg Leu Thr Pro
210             215             220
Arg Arg Pro His Gly Ala Val Gly Leu Asn Glu Ser Val Ala Leu Leu
225             230             235             240
Val Asp Ala His Ala Pro Arg Asp Arg Gly
            245             250
```


<210> 1412
<211> 169
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(169)
<223> X = any amino acid or stop code

<400> 1412

```
Ala Ala Pro His Arg Met Pro Arg Ala Pro His Phe Met Pro Leu Leu
1               5                   10                  15
Leu Leu Leu Leu Leu Leu Ser Leu Pro His Thr Gln Ala Ala Phe Pro
            20                  25                  30
Gln Asp Pro Leu Pro Leu Leu Ile Ser Asp Leu Gln Gly Thr Ser Pro
            35                  40                  45
Leu Ser Trp Leu Pro Ser Leu Glu Asp Asp Ala Val Ala Ala Xaa Leu
        50                  55                  60
Gly Leu Asp Phe Gln Arg Phe Leu Thr Leu Asn Arg Thr Leu Leu Val
65                  70                  75                  80
Ala Ala Arg Asp His Val Phe Ser Phe Asp Leu Gln Ala Glu Glu Glu
            85                  90                  95
Gly Glu Gly Leu Val Pro Asn Lys Tyr Leu Thr Trp Arg Ser Gln Asp
            100                 105                 110
Val Glu Asn Cys Ala Val Arg Xaa Lys Leu Thr Leu Asn Arg Thr Leu
            115                 120                 125
Leu Val Ala Ala Arg Asp His Val Phe Ser Phe Asp Leu Gln Ala Glu
            130                 135                 140
Glu Glu Gly Glu Gly Leu Val Pro Asn Lys Tyr Leu Thr Trp Arg Ser
145                 150                 155                 160
Gln Asp Val Glu Asn Cys Ala Val Arg
                165                 169
```

<210> 1413
<211> 131
<212> Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(131)
<223> X = any amino acid or stop code

<400> 1413

```
His Leu Val Pro Lys Thr Arg Gly Arg Gly Thr Pro Ser Gly Asp Gln
1               5                   10                  15
Ser Pro Val Leu Thr Leu Thr Pro Xaa Gly Asp Pro Pro Thr Ile Leu
            20                  25                  30
Gly Pro Gln Thr Asn Gln Pro Lys Glu His Leu Thr Asn Phe Lys Ser
            35                  40                  45
Gly Lys Arg Ser Phe His Ser Leu Leu Gln Pro Leu Leu Leu Leu Leu
        50                  55                  60
His Pro Ser Ile Ser Pro Phe Leu Asn Phe Gly Ser Phe Pro Phe Leu
65                  70                  75                  80
Val Glu Thr Glu Glu Thr Cys Phe Ile His Lys Leu Lys Thr Pro Ala
            85                  90                  95
Leu Val Thr Pro Asp Ser Leu Pro Leu Val Phe Asn His Cys Gly Asp
            100                 105                 110
Ala Cys Leu Ile Ile His Pro His Phe Arg Asp Val Glu Phe His His
            115                 120                 125
Thr Gly Asn
130 131
```

<210> 1414

<211> 365
<212>Amino acid
<213> Homo sapiens

<400> 1414
```
Cys Cys Ser Thr Lys Asn Ile Ser Gly Asp Lys Ala Cys Asn Leu Met
 1                   5                  10                  15
Ile Phe Asp Thr Arg Lys Thr Ala Arg Gln Pro Asn Cys Tyr Leu Phe
            20                  25                  30
Phe Cys Pro Asn Glu Glu Ala Cys Pro Leu Lys Pro Ala Lys Gly Leu
        35                  40                  45
Met Ser Tyr Arg Ile Ile Thr Asp Phe Pro Ser Leu Thr Arg Asn Leu
    50                  55                  60
Pro Ser Gln Glu Leu Pro Gln Glu Asp Ser Leu Leu His Gly Gln Phe
65                  70                  75                  80
Ser Gln Ala Val Thr Pro Leu Ala His His His Thr Asp Tyr Ser Lys
            85                  90                  95
Pro Thr Asp Ile Ser Trp Arg Asp Thr Leu Ser Gln Lys Phe Gly Ser
            100                 105                 110
Ser Asp His Leu Glu Lys Leu Phe Lys Met Asp Glu Ala Ser Ala Gln
    115                 120                 125
Leu Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser Gln Phe Ser
    130                 135                 140
Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser Ala Leu
145                 150                 155                 160
Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser Ala Thr Pro
            165                 170                 175
Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr Pro Ser Gly
            180                 185                 190
Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro Val Thr Thr Val
    195                 200                 205
Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr Val Phe Thr Arg Ala
    210                 215                 220
Ala Ala Thr Leu Gln Ala Met Ala Thr Thr Ala Val Leu Thr Thr Thr
225                 230                 235                 240
Phe Gln Ala Pro Thr Asp Ser Lys Gly Ser Leu Glu Thr Ile Pro Phe
            245                 250                 255
Thr Glu Ile Ser Asn Leu Thr Leu Asn Thr Gly Asn Val Tyr Asn Pro
            260                 265                 270
Thr Ala Leu Ser Met Ser Asn Val Glu Ser Ser Thr Met Asn Lys Thr
    275                 280                 285
Ala Ser Trp Glu Gly Arg Glu Ala Ser Pro Gly Ser Ser Ser Gln Gly
    290                 295                 300
Ser Val Pro Glu Asn Gln Tyr Gly Leu Pro Phe Glu Lys Trp Leu Leu
305                 310                 315                 320
Ile Gly Ser Leu Leu Phe Gly Val Leu Phe Leu Val Ile Gly Leu Val
            325                 330                 335
Leu Leu Gly Arg Ile Leu Ser Glu Ser Leu Arg Arg Lys Arg Tyr Ser
            340                 345                 350
Arg Leu Asp Tyr Leu Ile Asn Gly Ile Tyr Val Asp Ile
    355                 360                 365
```

<210> 1415
<211> 148
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature

```
        <222> (1)...(148)
        <223> X = any amino acid or stop code




        <400> 1415
Ile Phe Ala Gly Ser Gly Val Met Arg Leu Lys Ile Ser Leu Leu Lys
 1               5                  10                  15
Glu Pro Lys His Gln Glu Leu Val Ser Cys Val Gly Trp Thr Thr Ala
            20                  25                  30
Glu Glu Leu Tyr Ser Cys Ser Asp Asp His His Ile Val Lys Trp Asn
        35                  40                  45
Leu Leu Thr Ser Glu Thr Thr Gln Ile Val Lys Leu Pro Asp Asp Ile
    50                  55                  60
Tyr Pro Ile Asp Phe His Trp Phe Pro Lys Ser Leu Gly Val Lys Lys
 65              70                  75                  80
Gln Thr His Ala Glu Ser Phe Val Leu Thr Ser Ser Asp Gly Lys Phe
                85                  90                  95
His Leu Ile Ser Lys Leu Gly Arg Val Glu Lys Ser Val Glu Ala His
            100                 105                 110
Cys Gly Ala Val Leu Ala Gly Arg Trp Asn Tyr Glu Gly Thr Ala Leu
            115                 120                 125
Val Thr Val Gly Glu Asp Gly Gln Ile Xaa Ile Trp Ser Lys Thr Gly
    130                 135                 140
Met Leu Ile Ser
145             148
```

```
        <210> 1416
        <211> 122
        <212>Amino acid
        <213> Homo sapiens

        <220>
        <221> misc_feature
        <222> (1)...(122)
        <223> X = any amino acid or stop code




        <400> 1416
Ala Arg Ala Thr Thr Lys Arg His Phe Ile Leu Leu Phe Leu Phe Phe
 1               5                  10                  15
Leu Arg Arg Cys Leu Phe Leu Ser Pro Arg Met Glu Cys Asn Gly Ala
            20                  25                  30
Ile Leu Ala His Cys Asn Leu His Leu Pro Gly Ser Ser Ser Ser Ser
        35                  40                  45
Ala Ser Ala Ser Xaa Val Ala Gly Ile Thr Asp Val Arg His His Ala
    50                  55                  60
Gln Leu Ile Leu Phe Val Phe Leu Val Glu Thr Gly Phe His Arg Val
 65              70                  75                  80
Gly Gln Ala Gly Leu Lys Leu Leu Thr Ser Gly Asp Leu Leu Thr Ser
                85                  90                  95
Ala Ser Gln Ser Ala Gly Ile Ile Met Gly Ile Ser His Cys Ala Gln
            100                 105                 110
Pro Lys Lys Ala Phe Xaa Thr Lys Thr Phe
        115             120     122
```

```
        <210> 1417
```

<211> 138
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(138)
<223> X = any amino acid or stop code

<400> 1417
```
Glu Ala Gly Ser Asn Asp Asp Leu Ala Thr Xaa Lys Thr Cys Gly Arg
 1               5                  10                  15
Ala Arg Pro Ser Ser Arg Ser Arg Gln Phe Gly Ser Arg Val Trp Asn
            20                  25                  30
His Arg Gln Gly Val Arg Ser Ser Pro Gly Glu Gly Ala Gly Ser Arg
        35                  40                  45
Ser Pro Cys Arg Arg Arg His Arg Arg Lys His Arg Arg Asn Val Gln
    50                  55                  60
Ser Pro Xaa Arg Arg Arg Ser Arg Ser Cys Ser Arg Arg Ser Gly Arg
65                  70                  75                  80
Cys Ser Val Ala Leu Leu Gly Ala Cys Pro Val Ala Gly His Ser Arg
                85                  90                  95
Gly Lys Val Val Cys Arg Arg Ala His Ala Ile Thr Gln Arg Arg Arg
            100                 105                 110
Cys Cys Gly Phe Asp Pro Met Val His Pro Lys Glu His Arg Gly Xaa
            115                 120                 125
Arg Glu Arg Ser Arg Lys Trp Ser Arg Ser
130                 135                 138
```

<210> 1418
<211> 92
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(92)
<223> X = any amino acid or stop code

<400> 1418
```
Ala Thr Ala Pro Gly Leu Phe Asn Phe Phe Xaa Phe Leu Phe Gln Cys
 1               5                  10                  15
Arg Glu Glu His Lys Lys Lys Asn Pro Glu Val Pro Val Asn Phe Ala
            20                  25                  30
Glu Phe Ser Lys Lys Cys Ser Gly Arg Trp Lys Thr Met Ser Ser Lys
        35                  40                  45
Glu Lys Phe Lys Phe Gly Glu Met Ala Lys Ala Asp Glu Val Cys Tyr
    50                  55                  60
Asp Arg Glu Met Lys Asp Tyr Gly Pro Ala Lys Gly Gly Lys Lys Lys
65                  70                  75                  80
Asp Pro Asn Ala Pro Lys Arg Pro Pro Ser Gly Phe
                85                  90      92
```

<210> 1419

<211> 44
<212>Amino acid
<213> Homo sapiens

<400> 1419
Leu Thr Val Asn Tyr Val Leu Val Phe Ser Arg Asp Ser Gly Leu Arg
1   5   10   15
Ala Ile Glu Asn Leu Met Gln Lys Lys Gly Lys Phe Asp Tyr Ile Leu
            20   25   30
Leu Glu Thr Thr Gly Leu Ala Asp Pro Gly Lys Lys
        35   40   44

<210> 1420
<211> 91
<212>Amino acid
<213> Homo sapiens

<400> 1420
His Glu Ala Ala Leu Cys Arg Thr Arg Ala Val Ala Ala Glu Arg His
1   5   10   15
Phe Leu Arg Val Phe Leu Phe Phe Arg Pro Phe Arg Gly Val Gly Thr
            20   25   30
Glu Ser Gly Ser Glu Ser Gly Ser Ser Lys Ala Lys Glu Pro Arg Thr
        35   40   45
Pro Ser Ser Ser Tyr Gly Thr Ala Gln Tyr Arg Arg Trp Pro Ile Ala
    50   55   60
Gln Glu Tyr Lys His Cys Thr Ala His Asn Asp Thr Gly Thr Leu Cys
65   70   75   80
Ser Glu Leu Arg Glu Pro Trp Arg Arg Pro Gln
                85   90 91

<210> 1421
<211> 190
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(190)
<223> X = any amino acid or stop code

<400> 1421
Glu Gly Ser Ser Gln Ala Asn Thr Leu Arg Ser Arg Lys Glu Asn Arg
1   5   10   15
Asn Asn Leu Leu Ala Cys Leu Glu Ser His Val Leu Arg Xaa Gln Phe
            20   25   30
Thr Glu Ser His Leu Cys Ser Leu Met Gly Asp Asn Pro Phe Gln Pro
        35   40   45
Lys Ser Asn Ser Lys Met Ala Glu Leu Phe Met Glu Cys Glu Glu Glu
    50   55   60

885

```
Glu Leu Glu Pro Trp Gln Lys Lys Val Lys Glu Val Glu Asp Asp Asp
65              70              75              80
Asp Asp Glu Pro Ile Phe Val Gly Glu Ile Ser Ser Ser Lys Pro Ala
            85              90              95
Ile Ser Asn Ile Leu Asn Arg Val Asn Pro Ser Ser Tyr Ser Arg Gly
            100             105             110
Leu Lys Asn Gly Ala Leu Ser Arg Gly Ile Thr Ala Ala Phe Lys Pro
        115             120             125
Thr Ser Gln His Tyr Thr Asn Pro Thr Ser Asn Pro Val Pro Ala Ser
        130             135             140
Pro Ile Asn Phe His Pro Glu Ser Arg Ser Ser Asp Ser Ser Val Ile
145             150             155             160
Gly Gln Pro Phe Ser Lys Pro Val Ser Val Ser Lys Thr Ile Arg Pro
            165             170             175
Ala Gln Gly Ser Ile Gly Cys Cys Leu Ser Ile Ser Thr Val
            180             185             190
```

```
        <210> 1422
        <211> 207
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1422
Cys Phe Ser Leu Glu Asp Ile Leu Asn Phe Phe Leu Gln Gly Phe Ser
1               5               10              15
Ala Gly Leu Phe Ala Phe Tyr His Asp Lys Asp Gly Asn Pro Leu Thr
            20              25              30
Ser Arg Phe Ala Asp Gly Leu Pro Pro Phe Asn Tyr Ser Leu Gly Leu
        35              40              45
Tyr Gln Trp Ser Asp Lys Val Val Arg Lys Val Glu Arg Leu Trp Asp
    50              55              60
Val Arg Asp Asn Lys Ile Val Arg His Thr Val Tyr Leu Leu Val Thr
65              70              75              80
Pro Arg Val Val Glu Glu Ala Arg Lys His Phe Asp Cys Pro Val Leu
            85              90              95
Glu Gly Met Glu Leu Glu Asn Gln Gly Gly Val Gly Thr Glu Leu Asn
            100             105             110
His Trp Glu Lys Arg Leu Leu Glu Asn Glu Ala Met Thr Gly Ser His
        115             120             125
Thr Gln Asn Arg Val Leu Ser Arg Ile Thr Leu Ala Leu Met Glu Asp
        130             135             140
Thr Gly Arg Gln Met Leu Ser Pro Tyr Cys Asp Thr Leu Arg Ser Asn
145             150             155             160
Pro Leu Gln Leu Thr Cys Arg Gln Asp Gln Arg Ala Val Ala Val Cys
            165             170             175
Asn Leu Gln Lys Phe Pro Lys Pro Leu Pro Gln Glu Tyr Gln Tyr Phe
        180             185             190
Asp Glu Leu Ser Gly Ile Pro Ala Glu Asp Leu Pro Tyr Tyr Gly
    195             200             205 207
```

```
        <210> 1423
        <211> 423
        <212>Amino acid
        <213> Homo sapiens
```

```
      <400> 1423
Ala Ala Arg Arg Arg Arg Gln Leu Val Ser Arg Arg Arg Thr Ala Glu
  1               5                  10                  15
Tyr Pro Arg Arg Arg Arg Ser Ser Pro Ser Ala Arg Pro Pro Asp Val
             20                  25                  30
Pro Gly Gln Gln Pro Lys Ala Ala Lys Ser Pro Ser Pro Val Gln Gly
         35                  40                  45
Lys Lys Ser Pro Arg Leu Leu Cys Ile Glu Lys Val Thr Thr Asp Lys
     50                  55                  60
Asp Pro Lys Glu Glu Lys Glu Glu Asp Asp Ser Ala Leu Pro Gln
 65                  70                  75                  80
Glu Val Ser Ile Ala Ala Ser Arg Pro Ser Arg Gly Trp Arg Ser Ser
                 85                  90                  95
Arg Thr Ser Val Ser Arg His Arg Asp Thr Glu Asn Thr Arg Ser Ser
             100                 105                 110
Arg Ser Lys Thr Gly Ser Leu Gln Leu Ile Cys Lys Ser Glu Pro Asn
         115                 120                 125
Thr Asp Gln Leu Asp Tyr Asp Val Gly Glu Glu His Gln Ser Pro Gly
     130                 135                 140
Gly Ile Ser Ser Glu Glu Glu Glu Glu Glu Glu Glu Met Leu Ile
145                 150                 155                 160
Ser Glu Glu Glu Ile Pro Phe Lys Asp Asp Pro Arg Asp Glu Thr Tyr
                 165                 170                 175
Lys Pro His Leu Glu Arg Glu Thr Pro Lys Pro Arg Arg Lys Ser Gly
             180                 185                 190
Lys Val Lys Glu Glu Lys Glu Lys Lys Glu Ile Lys Val Glu Val Glu
         195                 200                 205
Val Glu Val Lys Glu Glu Glu Asn Glu Ile Arg Glu Asp Glu Glu Pro
     210                 215                 220
Pro Arg Lys Arg Gly Arg Arg Arg Lys Asp Asp Lys Ser Pro Arg Leu
225                 230                 235                 240
Pro Lys Arg Arg Lys Lys Pro Pro Ile Gln Tyr Val Arg Cys Glu Met
             245                 250                 255
Glu Gly Cys Gly Thr Val Leu Ala His Pro Arg Tyr Leu Gln His His
         260                 265                 270
Ile Lys Tyr Gln His Leu Leu Lys Lys Lys Tyr Val Cys Pro His Pro
     275                 280                 285
Ser Cys Gly Arg Leu Phe Arg Leu Gln Lys Gln Leu Leu Arg His Ala
     290                 295                 300
Lys His His Thr Asp Gln Arg Asp Tyr Ile Cys Glu Tyr Cys Ala Arg
305                 310                 315                 320
Ala Phe Lys Ser Ser His Asn Leu Ala Val His Arg Met Ile His Thr
             325                 330                 335
Gly Glu Lys Pro Leu Gln Cys Glu Ile Cys Gly Phe Thr Cys Arg Gln
         340                 345                 350
Lys Ala Ser Leu Asn Trp His Met Lys Lys His Asp Ala Asp Ser Phe
     355                 360                 365
Tyr Gln Phe Ser Cys Asn Ile Cys Gly Lys Lys Phe Glu Lys Lys Asp
     370                 375                 380
Ser Val Val Ala His Lys Ala Lys Ser His Pro Glu Val Leu Ile Ala
385                 390                 395                 400
Glu Ala Leu Ala Ala Asn Ala Gly Ala Leu Ile Thr Ser Thr Asp Ile
                 405                 410                 415
Leu Gly Thr Asn Pro Glu Ser
             420             423


      <210> 1424
      <211> 158
      <212> Amino acid
      <213> Homo sapiens
```

```
      <400> 1424
Met Thr Ala Asn Arg Leu Ala Glu Ser Leu Leu Ala Leu Ser Gln Gln
 1               5                  10                  15
Glu Glu Leu Ala Asp Leu Pro Lys Asp Tyr Leu Leu Ser Glu Ser Glu
            20                  25                  30
Asp Glu Gly Asp Asn Asp Gly Glu Arg Lys His Gln Lys Leu Leu Glu
        35                  40                  45
Ala Ile Ser Ser Leu Asp Gly Lys Asn Arg Arg Lys Leu Ala Glu Arg
    50                  55                  60
Ser Glu Ala Ser Leu Lys Val Ser Glu Phe Asn Val Ser Ser Glu Gly
65                  70                  75                  80
Ser Gly Glu Lys Leu Val Leu Ala Asp Leu Leu Glu Pro Val Lys Thr
                85                  90                  95
Ser Ser Ser Leu Ala Thr Val Lys Lys Gln Leu Ser Arg Val Lys Ser
            100                 105                 110
Lys Lys Thr Val Glu Leu Pro Leu Asn Lys Glu Glu Ile Glu Arg Ile
        115                 120                 125
His Arg Glu Val Ala Phe Asn Lys Thr Ala Gln Val Leu Ser Lys Trp
    130                 135                 140
Asp Pro Val Val Leu Lys Asn Arg Gln Ala Glu Gln Leu  *
145                 150                 155     157


      <210> 1425
      <211> 286
      <212> Amino acid
      <213> Homo sapiens

      <220>
      <221> misc_feature
      <222> (1)...(286)
      <223> X = any amino acid or stop code
```

```
      <400> 1425
Arg Ile Asp Phe Met Phe His Ser Ser Ala Met Val Asn Ser His Arg
 1               5                  10                  15
Lys Pro Met Phe Asn Ile His Arg Gly Phe Tyr Cys Leu Thr Ala Ile
            20                  25                  30
Leu Pro Gln Ile Cys Ile Cys Ser Gln Phe Ser Val Pro Ser Ser Tyr
        35                  40                  45
His Phe Thr Glu Asp Pro Gly Ala Phe Pro Val Ala Thr Asn Gly Glu
    50                  55                  60
Arg Phe Pro Trp Gln Glu Leu Arg Leu Pro Ser Val Val Ile Pro Leu
65                  70                  75                  80
His Tyr Asp Leu Phe Val His Pro Asn Leu Thr Ser Leu Asp Phe Val
                85                  90                  95
Ala Ser Glu Lys Ile Glu Val Leu Val Ser Asn Ala Thr Gln Leu Ile
            100                 105                 110
Ile Leu His Ser Lys Asp Leu Glu Ile Thr Asn Ala Thr Leu Gln Ser
        115                 120                 125
Glu Glu Asp Ser Arg Tyr Met Lys Pro Gly Lys Glu Leu Lys Val Leu
    130                 135                 140
Ser Tyr Pro Ala His Glu Gln Ile Ala Leu Leu Val Pro Glu Lys Leu
145                 150                 155                 160
Thr Pro His Leu Lys Tyr Tyr Val Ala Met Asp Phe Gln Ala Lys Leu
                165                 170                 175
Gly Asp Gly Phe Glu Gly Phe Tyr Lys Ser Thr Tyr Arg Thr Leu Gly
```

```
                    180                      185                    190
Gly Glu Thr Arg Ile Leu Ala Val Thr Asp Phe Glu Pro Thr Gln Ala
            195                      200                    205
Arg Met Ala Phe Pro Cys Phe Asp Glu Pro Leu Phe Lys Ala Asn Phe
        210                      215                    220
Ser Ile Lys Ile Arg Arg Glu Ser Arg His Ile Ala Leu Ser Asn Met
225                      230                      235                    240
Pro Lys Val Lys Thr Ile Glu Leu Glu Gly Gly Leu Leu Glu Asp His
                245                      250                    255
Phe Glu Thr Thr Val Lys Met Ser Thr Tyr Leu Val Ala Tyr Ile Asp
            260                      265                    270
Leu Xaa Phe Pro Leu Met Gly Asn Asp Phe Leu Gly Arg Ser
            275                      280                    285 286


        <210> 1426
        <211> 224
        <212>Amino acid
        <213> Homo sapiens




        <400> 1426
Arg Ser Lys Ile Pro Arg Ser Asp Pro Arg Val Arg Thr Pro Ala Pro
 1               5                   10                      15
Ala Glu Ala Glu Gln Gly Lys Ser Gln Cys Pro Ser Gly Ser Thr Ala
                20                   25                      30
Gln Ser Trp Ser Ala Met Asp Ile Leu Val Pro Leu Leu Gln Leu Leu
            35                   40                      45
Val Leu Leu Leu Thr Leu Pro Leu His Leu Met Ala Leu Leu Gly Cys
    50                   55                      60
Trp Gln Pro Leu Cys Lys Ser Tyr Phe Pro Tyr Leu Met Ala Val Leu
65                   70                      75                      80
Thr Pro Lys Ser Asn Arg Lys Met Glu Ser Lys Lys Arg Glu Leu Phe
                85                   90                      95
Ser Gln Ile Lys Gly Leu Thr Gly Ala Ser Gly Lys Val Ala Leu Leu
            100                  105                     110
Glu Leu Gly Cys Gly Thr Gly Ala Asn Phe Gln Phe Tyr Pro Pro Gly
        115                  120                     125
Cys Arg Val Thr Cys Leu Asp Pro Asn Pro His Phe Glu Lys Phe Leu
    130                  135                     140
Thr Lys Ser Met Ala Glu Asn Arg His Leu Gln Tyr Glu Arg Phe Val
145                  150                     155                     160
Val Ala Pro Gly Glu Asp Met Arg Gln Leu Ala Asp Gly Ser Met Asp
                165                  170                     175
Val Val Val Cys Thr Leu Val Leu Cys Ser Val Gln Ser Pro Arg Lys
            180                  185                     190
Val Leu Gln Glu Val Arg Arg Val Leu Arg Pro Gly Gly Val Leu Phe
        195                  200                     205
Phe Trp Glu His Val Ala Glu Pro Tyr Gly Ser Trp Ala Phe Met Trp
    210                  215                     220                 224


        <210> 1427
        <211> 133
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1427
Arg Leu Gln Asn Ser Ser Leu Met Asp Pro Lys Leu Gly Arg Met Ala
1               5                   10                  15
Ala Ser Leu Leu Ala Val Leu Leu Leu Leu Leu Leu Glu Arg Gly Met
            20                  25                  30
Phe Ser Ser Pro Ser Pro Pro Pro Ala Leu Leu Glu Lys Val Phe Gln
            35                  40                  45
Tyr Ile Asp Leu His Gln Asp Glu Phe Val Gln Thr Leu Lys Glu Trp
        50                  55                  60
Val Ala Ile Glu Ser Asp Ser Val Gln Pro Val Pro Arg Phe Arg Gln
65                  70                  75                  80
Glu Leu Phe Arg Met Met Ala Val Ala Ala Asp Thr Leu Gln Arg Leu.
            85                  90                  95
Gly.Ala Arg Val Ala Ser Val Asp Met Gly Pro Gln Gln Leu Pro Asp
            100                 105                 110
Gly Gln Ser Leu Pro Ile Pro Pro Val Ile Leu Ala Glu Leu Gly Ser
        115                 120                 125
Asp Pro Thr Lys Gly
    130         133


        <210> 1428
        <211> 38
        <212>Amino acid
        <213> Homo sapiens




        <400> 1428.
Phe Phe Phe Phe Glu Met Glu Ser Cys Ser Val Thr Gln Ala Gly Val
1               5                   10                  15
Pro Trp His Asp Leu Ser Ser Leu Gln Pro Pro Pro Arg Phe Lys
            20                  25                  30
Arg Phe Ser Cys Leu Ser
        35          38


        <210> 1429
        <211> 145
        <212>Amino acid
        <213> Homo sapiens




        <400> 1429
Asp Pro Lys Ala Gln Leu Pro Glu Pro Leu Arg Val Leu Trp Thr Ala
1               5                   10                  15
His Leu Val Ala Met Ala Pro Gly Ser Arg Thr Ser Leu Leu Leu Ala
            20                  25                  30
Phe Ala Leu Leu Cys Leu Pro Trp Leu Gln Glu Ala Gly Ala Val Gln
        35                  40                  45
Thr Val Pro Leu Ser Arg Leu Phe Asp His Ala Met Leu Gln Ala His
    50                  55                  60
Arg Ala His Gln Leu Ala Ile Asp Thr Tyr Gln Glu Phe Glu Glu Thr
65                  70                  75                  80
Tyr Ile Pro Lys Asp Gln Lys Tyr Ser Phe Leu His Asp Ser Gln Thr
            85                  90                  95
Ser Phe Cys Phe Ser Asp Ser Ile Pro Thr Pro Ser Asn Met Glu Glu
```

```
                    100                105               110
Thr Gln Gln Lys Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu Leu Leu
        115                120               125
Ile Glu Ser Trp Leu Glu Pro Val Arg Ile Leu Met Ser Ile Val Pro
    130                135               140
Asn
145
```

```
        <210> 1430
        <211> 453
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1430
Phe Val Lys Leu Ile Lys Lys His Gln Ala Ala Met Glu Lys Glu Ala
 1               5                10               15
Lys Val Met Ser Asn Glu Glu Lys Lys Phe Gln Gln His Ile Gln Ala
        20                25                30
Gln Gln Lys Lys Glu Leu Asn Ser Phe Leu Glu Ser Gln Lys Arg Glu
        35                40                45
Tyr Lys Leu Arg Lys Glu Gln Leu Lys Glu Glu Leu Asn Glu Asn Gln
    50                55                60
Ser Thr Pro Lys Lys Glu Lys Gln Glu Trp Leu Ser Lys Gln Lys Glu
65                70                75                80
Asn Ile Gln His Phe Gln Ala Glu Glu Glu Ala Asn Leu Leu Arg Arg
                85                90                95
Gln Arg Gln Tyr Leu Glu Leu Glu Cys Arg Arg Phe Lys Arg Arg Met
        100               105               110
Leu Leu Gly Arg His Asn Leu Glu Gln Asp Leu Val Arg Glu Glu Leu
        115               120               125
Asn Lys Arg Gln Thr Gln Lys Asp Leu Glu His Ala Met Leu Leu Arg
    130               135               140
Gln His Glu Ser Met Gln Glu Leu Glu Phe Arg His Leu Asn Thr Ile
145               150               155               160
Gln Lys Met Arg Cys Glu Leu Ile Arg Leu Gln His Gln Thr Glu Leu
            165               170               175
Thr Asn Gln Leu Glu Tyr Asn Lys Arg Arg Glu Arg Glu Leu Arg Arg
        180               185               190
Lys His Val Met Glu Val Arg Gln Gln Pro Lys Ser Leu Lys Ser Lys
        195               200               205
Glu Leu Gln Ile Lys Lys Gln Phe Gln Asp Thr Cys Lys Ile Gln Thr
    210               215               220
Arg Gln Tyr Lys Ala Leu Arg Asn His Leu Leu Glu Thr Thr Pro Lys
225               230               235               240
Ser Glu His Lys Ala Val Leu Lys Arg Leu Lys Glu Glu Gln Thr Arg
                245               250               255
Lys Leu Ala Ile Leu Ala Glu Gln Tyr Asp His Ser Ile Asn Glu Met
            260               265               270
Leu Ser Thr Gln Ala Leu Arg Leu Asp Glu Ala Gln Glu Ala Glu Cys
    275               280               285
Gln Val Leu Lys Met Gln Leu Gln Gln Glu Leu Glu Leu Leu Asn Ala
    290               295               300
Tyr Gln Ser Lys Ile Lys Met Gln Ala Glu Ala Gln His Asp Arg Glu
305               310               315               320
Leu Arg Glu Leu Glu Gln Arg Val Ser Leu Arg Arg Ala Leu Leu Glu
                325               330               335
Gln Lys Ile Glu Glu Glu Met Leu Ala Leu Gln Asn Glu Arg Thr Glu
        340               345               350
Arg Ile Arg Ser Leu Leu Glu Arg Gln Ala Arg Glu Ile Glu Ala Phe
```

```
             355                      360                      365
Asp Ser Glu Ser Met Arg Leu Gly Phe Ser Asn Met Val Leu Ser Asn
     370                      375                      380
Leu Ser Pro Glu Ala Phe Ser His Ser Tyr Pro Gly Ala Ser Gly Trp
385                      390                      395                      400
Ser His Asn Pro Thr Gly Gly Pro Gly Pro His Trp Gly His Pro Met
             405                      410                      415
Gly Gly Pro Pro Gln Ala Trp Gly His Pro Met Gln Gly Gly Pro Gln
             420                      425                      430
Pro Trp Gly His Pro Ser Gly Pro Met Gln Gly Val Pro Arg Gly Ser
         435                      440                      445
Ser Met Gly Val Arg
     450                  453
```

```
     <210> 1431
     <211> 151
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1431
Leu Ala His Gly Ser Phe Gly Val Ser Asp Phe Pro Ala Pro Ala Ala
 1               5                       10                      15
Ala Pro Ala His Thr Leu Thr Ser Phe Ser Gly Ser Leu Ser Pro Gln
             20                      25                      30
Phe Arg Lys Pro Leu Gly Arg Ala Pro Ala Met Pro Leu Val Arg Tyr
         35                      40                      45
Arg Lys Val Val Ile Leu Gly Tyr Arg Cys Val Gly Lys Thr Ser Leu
     50                      55                      60
Ala His Gln Phe Val Glu Gly Glu Phe Ser Glu Gly Tyr Asp Pro Thr
65                      70                      75                      80
Val Glu Asn Thr Tyr Ser Lys Ile Val Thr Leu Gly Lys Asp Glu Phe
             85                      90                      95
His Leu His Leu Val Asp Thr Ala Gly Gln Asp Glu Tyr Ser Ile Leu
         100                     105                     110
Pro Tyr Ser Phe Ile Ile Gly Val His Gly Tyr Val Leu Val Tyr Ser
     115                     120                     125
Val Thr Ser Leu His Ser Phe Gln Val Ile Glu Ser Leu Tyr Gln Lys
     130                     135                     140
Leu His Glu Gly His Gly Lys
145                 150 151
```

```
     <210> 1432
     <211> 514
     <212>Amino acid
     <213> Homo sapiens
```

```
     <400> 1432
Ser Ser Pro Ser Arg Glu Leu Cys Phe Tyr Gly Phe Trp Ile Ala Ser
 1               5                       10                      15
Ser Trp Trp Ser Arg Trp Val Gly Ser Leu Gly Pro Gly Ile Leu Pro
             20                      25                      30
Ser Pro Pro Ala Arg Gly Arg Thr Phe Ala Ser Val Ser Arg Leu Pro
         35                      40                      45
Pro Pro Trp Ser Ala Gly Ile Thr Leu Thr Pro Phe Leu Ile Cys Gln
```

```
          50                    55                    60
Ser Gly Ser Val Cys Pro Gly Leu Gly Ala Gly Phe Gly Val Arg Ser
65                      70                    75                    80
Phe His His Pro Val Ala Arg Ser Ala Val Leu Leu Leu Pro Leu Ala
                   85                    90                    95
Pro Ala Ala Ala Gln Asp Ser Thr Gln Ala Ser Thr Pro Gly Ser Pro
               100                   105                   110
Leu Ser Pro Thr Glu Tyr Glu Arg Phe Phe Ala Leu Leu Thr Pro Thr
           115                   120                   125
Trp Lys Ala Glu Thr Thr Cys Arg Leu Arg Ala Thr His Gly Cys Arg
       130                   135                   140
Asn Pro Thr Leu Val Gln Leu Asp Gln Tyr Glu Asn His Gly Leu Val
145                   150                   155                   160
Pro Asp Gly Ala Val Cys Ser Asn Leu Pro Tyr Ala Ser Trp Phe Glu
                   165                   170                   175
Ser Phe Cys Gln Phe Thr His Tyr Arg Cys Ser Asn His Val Tyr Tyr
               180                   185                   190
Ala Lys Arg Val Leu Cys Ser Gln Pro Val Ser Ile Leu Ser Pro Asn
           195                   200                   205
Thr Leu Lys Glu Ile Glu Ala Ser Ala Glu Val Ser Pro Thr Thr Met
       210                   215                   220
Thr Ser Pro Ile Ser Pro His Phe Thr Val Thr Glu Arg Gln Thr Phe
225                   230                   235                   240
Gln Pro Trp Pro Glu Arg Leu Ser Asn Asn Val Glu Glu Leu Leu Gln
                   245                   250                   255
Ser Ser Leu Ser Leu Gly Gly Gln Glu Gln Ala Pro Glu His Lys Gln
               260                   265                   270
Glu Gln Gly Val Glu His Arg Gln Glu Pro Thr Gln Glu His Lys Gln
           275                   280                   285
Glu Glu Gly Gln Lys Gln Glu Glu Gln Glu Glu Gln Glu Glu Glu
       290                   295                   300
Gly Lys Gln Glu Glu Gly Gln Gly Thr Lys Glu Gly Arg Glu Ala Val
305                   310                   315                   320
Ser Gln Leu Gln Thr Asp Ser Glu Pro Lys Phe His Ser Glu Ser Leu
               325                   330                   335
Ser Ser Asn Pro Ser Ser Phe Ala Pro Arg Val Arg Glu Val Glu Ser
           340                   345                   350
Thr Pro Met Ile Met Glu Asn Ile Gln Glu Leu Ile Arg Ser Ala Gln
       355                   360                   365
Glu Ile Asp Glu Met Asn Glu Ile Tyr Asp Glu Asn Ser Tyr Trp Arg
   370                   375                   380
Asn Gln Asn Pro Gly Ser Leu Leu Gln Leu Pro His Thr Glu Ala Leu
385                   390                   395                   400
Leu Val Leu Cys Tyr Ser Ile Val Glu Asn Thr Cys Ile Ile Thr Pro
               405                   410                   415
Thr Ala Lys Ala Trp Lys Tyr Met Glu Glu Glu Ile Leu Gly Phe Gly
           420                   425                   430
Lys Ser Val Cys Asp Ser Leu Gly Arg Arg His Met Ser Thr Cys Ala
       435                   440                   445
Leu Cys Asp Phe Cys Ser Leu Lys Leu Glu Gln Cys His Ser Glu Ala
   450                   455                   460
Ser Leu Gln Arg Gln Gln Cys Asp Thr Ser His Lys Thr Pro Phe Val
465                   470                   475                   480
Ser Pro Leu Leu Ala Ser Gln Ser Leu Ser Ile Gly Asn Gln Val Gly
               485                   490                   495
Ser Pro Glu Ser Gly Arg Phe Tyr Gly Leu Asp Leu Tyr Gly Gly Leu
           500                   505                   510
His Met
514
```

<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(241)
<223> X = any amino acid or stop code

<400> 1433

```
Val Ser Trp Val Pro Ser Lys Asp Gly Asp Val Glu Gly Ala Arg Arg
1               5                   10                  15
Pro Phe Thr Arg Leu Asn Thr Ser Leu Gly Pro Gly Leu Gln Glu Gly
                20                  25                  30
Arg Arg Arg Thr Trp Leu Val Pro Ile Pro Gly Ala Val Leu Pro Gly
            35                  40                  45
Arg Thr Gln Glu Gln Pro Arg Ala Ser Pro Leu Tyr Xaa Pro Gly Ala
        50                  55                  60
Pro Pro Cys Gln Pro Gln Gly Leu Val Ala Gly Pro Trp Ala Gln Xaa
65                  70                  75                  80
Ala Gly Leu Arg Ser Asp Gly Phe Gly Pro Trp Pro Trp Arg Leu Val
                85                  90                  95
Gly Thr Ala Gly Pro Arg Glu Lys Lys Val Gln Lys Ser Lys Cys Trp
            100                 105                 110
His Phe Arg Cys Gly Arg His Pro Ala Arg Arg Ser Gly Trp Ala Gly
        115                 120                 125
Arg His Ala Ser Leu Leu Ala Thr Gly Arg Pro Cys Ser Ser Ala Pro
    130                 135                 140
Ser Gln Gln Pro Leu Gly Thr Ala Gly Asp Ser Arg Gln Glu Leu Leu
145                 150                 155                 160
Arg Pro Pro Leu Val Xaa Val Asn Gly Ala Gln Ser Ser Ala Ala Gly
                165                 170                 175
Asp Trp Gly Ser Ser Pro Arg Thr Ala Gln Ala Leu Ala Arg Pro His
            180                 185                 190
Arg Leu Gly His His Pro Ala Ala Val Ala Pro Ala Ala Arg Leu Arg
        195                 200                 205
Thr Gln Ser Gly His Ser Pro Arg Gly Pro Leu Cys Arg Ser Pro Gly
    210                 215                 220
Ser Pro Arg Arg Met Gly Thr Trp Arg Gly Pro Ala Gly His Ser His
225                 230                 235                 240
Asp
241
```

<210> 1434
<211> 127
<212> Amino acid
<213> Homo sapiens

<400> 1434

```
Lys Thr Val Ala Glu Glu Ala Ser Val Gly Asn Pro Glu Gly Ala Phe
1               5                   10                  15
Met Lys Met Leu Gln Ala Arg Lys Gln His Met Ser Thr Glu Leu Thr
                20                  25                  30
Ile Glu Ser Glu Ala Pro Ser Asp Ser Ser Gly Ile Asn Leu Ser Gly
            35                  40                  45
Phe Gly Ser Glu Gln Leu Asp Thr Asn Asp Glu Ser Asp Val Ser Ser
        50                  55                  60
```

```
Ala Leu Ser Tyr Ile Leu Pro Tyr Leu Ser Leu Arg Asn Leu Gly Ala
65                  70                  75                  80
Glu Ser Ile Leu Leu Pro Phe Thr Glu Gln Leu Phe Ser Asn Val Gln
                85                  90                  95
Asp Gly Asp Arg Leu Leu Ser Ile Leu Lys Asn Asn Arg Lys Ser Pro
            100                 105                 110
Ser Gln Ser Ser Leu Leu Gly Asn Lys Phe Lys Asn Lys Ile Phe
        115                 120                 125 127
```

```
<210> 1435
<211> 182
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1435
Gly Glu Cys Phe Ile Met Ala Ala Val Val Gln Gln Asn Asp Leu Val
1               5               10                  15
Phe Glu Phe Ala Ser Asn Val Met Glu Asp Glu Arg Gln Leu Gly Asp
            20                  25                  30
Pro Ala Ile Phe Pro Ala Val Ile Val Glu His Val Pro Gly Ala Asp
        35                  40                  45
Ile Leu Asn Ser Tyr Ala Gly Leu Ala Cys Val Glu Glu Pro Asn Asp
    50                  55                  60
Met Ile Thr Glu Ser Ser Leu Asp Val Ala Glu Glu Glu Ile Ile Asp
65                  70                  75                  80
Asp Asp Asp Asp Asp Ile Thr Leu Thr Val Glu Ala Ser Cys His Asp
                85                  90                  95
Gly Asp Glu Thr Ile Glu Thr Ile Glu Ala Ala Glu Ala Leu Leu Asn
            100                 105                 110
Met Asp Ser Pro Gly Pro Met Leu Asp Glu Lys Arg Ile Asn Asn Asn
        115                 120                 125
Ile Phe Ser Ser Pro Glu Asp Asp Met Val Val Ala Pro Val Thr His
    130                 135                 140
Val Ser Val Thr Leu Asp Gly Ile Pro Glu Val Met Glu Thr Gln Gln
145                 150                 155                 160
Val Gln Glu Lys Tyr Ala Asp Ser Pro Gly Ala Ser Ser Pro Glu Gln
                165                 170                 175
Pro Lys Arg Lys Lys Lys
            180     182
```

```
<210> 1436
<211> 154
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1436
His Glu Ala Ser Gly Val Ser Arg Ala Leu Leu Gln Ser Ala Pro Gly
1               5               10                  15
Thr Pro Ala Thr Val Gly Ile Ser Val Gly Glu Leu Trp Pro Phe Ala
            20                  25                  30
Arg Cys Cys Ser His Ser Tyr Val Arg Ser Leu Arg Gly Leu Ser Val
        35                  40                  45
Ser Thr His Leu Leu Cys Phe Thr Ile Tyr Ile Met Asn Pro Ser Met
    50                  55                  60
```

```
Lys Gln Lys Gln Glu Glu Ile Lys Glu Asn Ile Lys Thr Ser Ser Val
65              70                      75                      80
Pro Arg Arg Thr Leu Lys Met Ile Gln Pro Ser Ala Ser Gly Ser Leu
            85                      90                      95
Val Gly Arg Glu Asn Glu Leu Ser Ala Gly Leu Ser Lys Arg Lys His
            100                     105                     110
Arg Asn Asp His Leu Thr Ser Thr Thr Ser Ser Pro Gly Val Ile Val
            115                     120                     125
Pro Glu Ser Ser Glu Asn Lys Asn Leu Gly Gly Val Thr Gln Glu Ser
        130                     135                     140
Phe Asp Leu Met Ile Lys Gly Met Lys Lys
145                 150                 154
```

```
    <210> 1437
    <211> 63
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1437
Pro Leu Pro Ala Arg Gly Lys Ser Thr Leu Pro Ala Thr Phe Cys Ser
1               5                       10                      15
Pro Ser Ala Pro Glu Leu Ala Ser Met Ser Val Val Pro Pro Asn Arg
            20                      25                      30
Ser Gln Thr Gly Trp Pro Arg Gly Val Thr Gln Phe Gly Asn Lys Tyr
        35                      40                      45
Ile Gln Gln Thr Lys Pro Leu Thr Leu Glu Arg Thr Ile Asn Leu
    50                      55                      60          63
```

```
    <210> 1438
    <211> 140
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1438
Ala Glu Gly Glu Asp Val Pro Pro Leu Pro Thr Ser Ser Gly Asp Gly
1               5                       10                      15
Trp Glu Lys Asp Leu Glu Glu Ala Leu Glu Ala Gly Gly Cys Asp Leu
            20                      25                      30
Glu Thr Leu Arg Asn Ile Ile Gln Gly Arg Pro Leu Pro Ala Asp Leu
        35                      40                      45
Arg Ala Lys Val Trp Lys Ile Ala Leu Asn Val Ala Gly Lys Gly Asp
    50                      55                      60
Ser Leu Ala Ser Trp Asp Gly Ile Leu Asp Leu Pro Glu Gln Asn Thr
65                  70                      75                      80
Ile His Lys Asp Cys Leu Gln Phe Ile Asp Gln Leu Ser Val Pro Glu
                85                      90                      95
Glu Lys Ala Ala Glu Leu Leu Leu Asp Ile Glu Ser Val Ile Thr Phe
            100                     105                     110
Tyr Cys Lys Ser Arg Asn Ile Lys Tyr Ser Thr Ser Leu Ser Trp Ile
        115                     120                     125
His Leu Leu Lys Pro Leu Val His Leu Gln Leu Pro
    130                 135                     140
```

```
<210> 1439
<211> 84
<212>Amino acid
<213> Homo sapiens


<400> 1439
Ala Leu Pro Lys Phe Leu Thr His Gly Val Lys Ser Asn Glu Arg Val
1               5                   10                  15
Val Val Trp Leu Phe Pro Pro Ser Phe Arg Ala Ala Thr Met Val His
            20                  25                  30
Met Asn Val Leu Pro Asp Ala Leu Lys Ser Ile Asn Asn Ala Glu Arg
        35                  40                  45
Arg Gly Lys Pro Gln Val Leu Ile Arg Leu Cys Ser Lys Ile Ile Ile
    50                  55                  60
Trp Phe Leu Thr Val Met Val Lys Tyr Gly Tyr Ile Gly Lys Phe Glu
65                  70                  75                  80
Pro Thr Arg Pro
            84


<210> 1440
<211> 255
<212>Amino acid
<213> Homo sapiens


<400> 1440
Ala Met Ala Gln Tyr Gly His Pro Ser Pro Leu Gly Met Ala Ala Arg
1               5                   10                  15
Glu Glu Leu Tyr Ser Lys Val Thr Pro Arg Arg Asn Arg Gln Gln Arg
            20                  25                  30
Pro Gly Thr Ile Lys His Gly Ser Ala Leu Asp Val Leu Leu Ser Met
        35                  40                  45
Gly Phe Pro Arg Ala Arg Ala Gln Lys Ala Leu Ala Ser Thr Gly Gly
    50                  55                  60
Arg Ser Val Gln Ala Ala Cys Asp Trp Leu Phe Ser His Val Gly Asp
65                  70                  75                  80
Pro Phe Leu Asp Asp Pro Leu Pro Arg Glu Tyr Val Leu Tyr Leu Arg
            85                  90                  95
Pro Thr Gly Pro Leu Ala Gln Lys Leu Ser Asp Phe Trp Gln Gln Ser
            100                 105                 110
Lys Gln Ile Cys Gly Lys Asn Lys Ala His Asn Ile Phe Pro His Ile
            115                 120                 125
Thr Leu Cys Gln Phe Phe Met Cys Glu Asp Ser Lys Val Asp Ala Leu
    130                 135                 140
Gly Glu Ala Leu Gln Thr Thr Val Ser Arg Trp Lys Cys Lys Phe Ser
145                 150                 155                 160
Ala Pro Leu Pro Leu Glu Leu Tyr Thr Ser Ser Asn Phe Ile Gly Leu
            165                 170                 175
Phe Val Lys Glu Asp Ser Ala Glu Val Leu Lys Lys Phe Ala Ala Asp
            180                 185                 190
Phe Ala Ala Glu Ala Ala Ser Lys Thr Glu Val His Val Glu Pro His
        195                 200                 205
Lys Lys Gln Leu His Val Thr Leu Ala Tyr His Phe Gln Ala Ser His
    210                 215                 220
Leu Pro Thr Leu Glu Lys Leu Ala Gln Asn Ile Asp Val Lys Leu Gly
225                 230                 235                 240
```

```
Cys Asp Trp Val Ala Thr Ile Phe Ser Arg Asp Ile Arg Phe Ala
                245                 250                 255
```

```
        <210> 1441
        <211> 134
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1441
Gln Thr Arg Pro Ala Ser Pro Arg Thr Ala Arg Glu Ser Val Leu Gly
1               5                   10                  15
Val Ser Gln Asn Met Ser Phe Asn Leu Gln Ser Ser Lys Lys Leu Phe
            20                  25                  30
Ile Phe Leu Gly Lys Ser Leu Phe Ser Leu Leu Glu Ala Met Ile Phe
        35                  40                  45
Ala Leu Leu Pro Lys Pro Arg Lys Asn Val Ala Gly Glu Ile Val Leu
    50                  55                  60
Ile Thr Gly Ala Gly Ser Gly Leu Gly Arg Leu Leu Ala Leu Gln Phe
65              70                  75                  80
Ala Arg Leu Gly Ser Val Leu Val Leu Trp Asp Ile Asn Lys Glu Gly
            85                  90                  95
Asn Glu Glu Thr Cys Lys Met Ala Arg Glu Ala Gly Ala Thr Arg Val
            100                 105                 110
His Ala Tyr Thr Cys Asp Cys Ser Gln Lys Glu Gly Val Tyr Arg Val
    115                 120                 125
Ala Asp Gln Val Lys Lys
    130             134
```

```
        <210> 1442
        <211> 155
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1442
Met Val Ala Arg Lys Gly Gln Lys Ser Pro Arg Phe Arg Arg Val Thr
1               5                   10                  15
Cys Phe Leu Arg Leu Gly Arg Ser Thr Leu Leu Glu Leu Glu Pro Ala
            20                  25                  30
Gly Arg Pro Cys Ser Gly Arg Thr Arg His Arg Ala Leu His Arg Arg
        35                  40                  45
Leu Val Ala Cys Val Thr Val Ser Ser Arg Arg His Arg Lys Glu Ala
    50                  55                  60
Gly Arg Gly Arg Ala Glu Ser Phe Ile Ala Val Gly Met Ala Ala Pro
65              70                  75                  80
Ser Met Lys Glu Arg Gln Val Cys Trp Gly Ala Arg Asp Glu Tyr Trp
            85                  90                  95
Lys Cys Leu Asp Glu Asn Leu Glu Asp Ala Ser Gln Cys Lys Lys Leu
            100                 105                 110
Arg Ser Ser Phe Glu Ser Ser Cys Pro Gln Gln Trp Ile Lys Tyr Phe
    115                 120                 125
Asp Lys Arg Arg Asp Tyr Leu Lys Phe Lys Glu Lys Phe Glu Ala Gly
    130                 135                 140
Gln Phe Glu Pro Ser Glu Thr Thr Ala Lys Ser
145                 150                 155
```

<210> 1443
<211> 157
<212>Amino acid
<213> Homo sapiens

<400> 1443

Pro	Ala	Pro	Ala	Ala	Arg	Ser	Arg	Glu	Leu	Leu	Lys	Glu	Leu	Arg	Asn
1				5					10					15	
Gly	Gln	Asp	Met	Asp	Thr	Val	Val	Phe	Glu	Asp	Val	Val	Val	Asp	Phe
		20					25					30			
Thr	Leu	Glu	Glu	Trp	Ala	Leu	Leu	Asn	Pro	Ala	Gln	Arg	Lys	Leu	Tyr
		35				40					45				
Arg	Asp	Val	Met	Leu	Glu	Thr	Phe	Lys	His	Leu	Ala	Ser	Val	Asp	Asn
	50				55					60					
Glu	Ala	Gln	Leu	Lys	Ala	Ser	Gly	Ser	Ile	Ser	Gln	Gln	Asp	Thr	Ser
65				70				75							80
Gly	Glu	Lys	Leu	Ser	Leu	Lys	Gln	Lys	Ile	Glu	Lys	Phe	Thr	Arg	Lys
				85				90					95		
Asn	Ile	Trp	Ala	Ser	Leu	Leu	Gly	Lys	Asn	Trp	Glu	Glu	His	Ser	Val
			100				105					110			
Lys	Asp	Lys	His	Asn	Thr	Lys	Glu	Arg	His	Leu	Ser	Arg	Asn	Pro	Arg
		115				120					125				
Val	Glu	Arg	Pro	Cys	Lys	Ser	Ser	Lys	Gly	Asn	Lys	Arg	Gly	Arg	Thr
	130				135					140					
Phe	Arg	Lys	Thr	Arg	Asn	Cys	Asn	Arg	His	Leu	Arg	Arg			
145					150					155	157				

<210> 1444
<211> 53
<212>Amino acid
<213> Homo sapiens

<400> 1444

Cys	Val	Cys	Gly	Phe	Phe	Val	Cys	Phe	Glu	Thr	Lys	Ser	Cys	Phe	Val
1				5					10					15	
Ala	Gln	Ala	Gly	Val	Gln	Trp	His	Asn	Leu	Ser	Ser	Leu	Gln	Ala	Leu
		20					25					30			
Pro	Pro	Gly	Phe	Lys	Gln	Phe	Ser	Cys	Leu	Ser	Leu	Leu	Ser	Ser	Trp
		35				40					45				
His	Tyr	Arg	Arg	Val											
	50			53											

<210> 1445
<211> 106
<212>Amino acid
<213> Homo sapiens

<400> 1445

```
Gly Thr Arg Leu Arg Arg Arg Arg Glu Ala Val Trp Phe Glu Val Val
 1           .       5               10                  15
Asn Met Asp Phe Ser Arg Leu His Met Tyr Ser Pro Pro Gln Cys Val
            20                  25                  30
Pro Glu Asn Thr Gly Tyr Thr Tyr Ala Leu Ser Ser Ser Tyr Ser Ser
            35                  40                  45
Asp Ala Leu Asp Phe Glu Thr Glu His Lys Leu Asp Pro Val Phe Asp
    50                  55                  60
Ser Pro Arg Met Ser Arg Arg Ser Leu Arg Leu Ala Thr Thr Ala Cys
65      .       70                  75                      80
Thr Leu Gly Asp Gly Glu Ala Val Gly Ala Asp Ser Gly Thr Ser Ser
            85                  90                  95
Ala Val Ser Leu Lys Asn Arg Ala Ala Arg
            100                 105 106
```

<210> 1446
<211> 95
<212>Amino acid
<213> Homo sapiens

<400> 1446
```
Asp Thr Met Gln Ala Val Val Pro Leu Asn Lys Met Thr Ala Ile Ser
 1               5               10                  15
Pro Glu Pro Gln Thr Leu Ala Ser Thr Glu Gln Asn Glu Val Pro Arg
            20                  25                  30
Val Val Thr Ser Gly Glu Gln Glu Ala Ile Leu Arg Gly Asn Ala Ala
            35                  40                  45
Asp Ala Glu Ser Phe Arg Gln Arg Phe Arg Trp Phe Cys Tyr Ser Glu
     50                  55                  60
Val Ala Gly Pro Arg Lys Ala Leu Ser Gln Leu Trp Glu Leu Cys Asn
65              70                  75                      80
Gln Trp Leu Arg Pro Asp Ile His Thr Lys Glu Gln Ile Leu Glu
            85                  90                      95
```

<210> 1447
<211> 127
<212>Amino acid
<213> Homo sapiens

<400> 1447
```
Pro Ile Cys Leu Phe Ser Arg Pro Thr Leu Arg Pro Ser Arg Ser Lys
 1               5   .           10                  15
Val Ser Leu Ile Glu Gly Arg Gly Ala Asn Met Ala Ala Arg Trp Arg
            20                  25                  30
Phe Trp Cys Val Ser Val Thr Met Val Val Ala Leu Leu Ile Val Cys
            35                  40                  45
Asp Val Pro Ser Ala Ser Ala Gln Arg Lys Lys Glu Met Val Leu Ser
    50                  55                  60
Glu Lys Val Ser Gln Leu Met Glu Trp Thr Asn Lys Arg Pro Val Ile
65              70                  75                      80
Arg Met Asn Gly Asp Lys Phe Arg Arg Leu Val Lys Ala Pro Pro Arg
            85                  90                      95
Asn Tyr Ser Val Ile Val Met Phe Thr Ala Leu Gln Leu His Arg Gln
            100                 105                 110
```

900

```
Cys Val Val Cys Lys Tyr Glu Leu Gln Leu Arg Phe Lys Ile Lys
        115                 120             125     127
```

```
<210> 1448
<211> 143
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1448
Gln Met Arg Val Lys Asp Pro Thr Lys Ala Leu Pro Glu Lys Ala Lys
 1               5               10              15
Arg Ser Lys Arg Pro Thr Val Pro His Asp Glu Asp Ser Ser Asp Asp
            20              25              30
Ile Ala Val Gly Leu Thr Cys Gln His Val Ser His Ala Ile Ser Val
            35              40              45
Asn His Val Lys Arg Ala Ile Ala Glu Asn Leu Trp Ser Val Cys Ser
        50              55              60
Glu Cys Leu Lys Glu Arg Arg Phe Tyr Asp Gly Gln Leu Val Leu Thr
65              70              75              80
Ser Asp Ile Trp Leu Cys Leu Lys Cys Gly Phe Gln Gly Cys Gly Lys
                85              90              95
Asn Ser Glu Ser Gln His Ser Leu Lys His Phe Lys Ser Ser Arg Thr
        100             105             110
Glu Pro His Cys Ile Ile Ile Asn Leu Ser Thr Trp Ile Ile Trp Trp
        115             120             125
Tyr Glu Trp Asp Glu Lys Ile Phe Thr Pro Leu Asn Lys Lys Gly
        130             135             140     143
```

```
<210> 1449
<211> 121
<212>Amino acid
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(121)
<223> X = any amino acid or stop code
```

```
<400> 1449
Ala Lys Glu Arg Gly Glu Glu Arg Gln Gly Glu Gly Gly Gly Trp Leu
 1               5               10              15
Ser Gly Ser Arg Trp Pro Leu Val Arg Ser Ala Phe Val Pro Ala Pro
            20              25              30
Ser Ser Leu Ile Leu Ser Met Cys Leu Ser Pro Gly Ile Pro Glu Ala
            35              40              45
Ala Pro Asp Ser Pro Leu Thr Ala Ser Ala Pro Thr Pro Xaa Val Met
        50              55              60
Leu Leu Gly Asp Thr Gly Val Gly Lys Thr Cys Phe Leu Ile Gln Phe
65              70              75              80
Lys Asp Gly Ala Phe Leu Ser Gly Thr Phe Ile Ala Thr Val Gly Ile
                85              90              95
Asp Phe Arg Val Arg Trp Leu Gln Ala Leu Ala Ser Ser Arg Glu Pro
        100             105             110
Gly Leu Trp Leu Arg His Gly Gly Val
```

115   120 121

```
<210> 1450
<211> 76
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1450
Phe Tyr Pro Arg Ser Ser Ala Asp Leu Pro Phe Gln Thr Thr Arg Cys
 1               5                  10                  15
Glu Phe Gln Thr Ser Val Met Glu Leu Ala His Ser Leu Leu Leu Asn
            20                  25                  30
Glu Glu Ala Leu Ala Gln Ile Thr Glu Ala Lys Arg Pro Val Phe Ile
        35                  40                  45
Phe Glu Trp Leu Arg Phe Leu Asp Lys Val Leu Val Ala Ala Asn Lys
    50                  55                  60
Val Trp Tyr Cys Ser Phe Phe Pro Val Ala Leu Thr
65                  70                  75  76
```

```
<210> 1451
<211> 95
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1451
Met Asn Met Lys Gln Lys Ser Val Tyr Gln Gln Thr Lys Ala Leu Leu
 1               5                  10                  15
Cys Lys Asn Phe Leu Lys Lys Trp Arg Met Lys Arg Glu Ser Leu Leu
            20                  25                  30
Glu Trp Gly Leu Ser Ile Leu Leu Gly Leu Cys Ile Ala Leu Phe Ser
        35                  40                  45
Ser Ser Met Arg Asn Val Gln Phe Pro Gly Met Ala Pro Gln Asn Leu
    50                  55                  60
Gly Arg Val Asp Lys Phe Asn Ser Ser Ser Leu Met Val Val Tyr Thr
 65                  70                  75                  80
Pro Ile Ser Asn Leu Thr Gln Gln Ile Met Asn Lys Thr Ala Leu
            85                  90                  95
```

```
<210> 1452
<211> 174
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1452
Ser Pro Gln Gly Asn Gly Cys Pro Asp Val Thr Gly Asp Ser Val Ile
 1               5                  10                  15
Arg Val Pro Leu Thr Leu Leu Val His Asn Leu Ala Gly Leu Thr Gly
            20                  25                  30
Leu Leu His His Cys Leu Ser Gly Pro Leu Pro Ala Pro Ser Pro Pro
```

902

```
               35                    40                     45
Pro Ala Met Ser Ser Ser Arg Lys Asp His Leu Gly Ala Ser Ser Ser
    50                      55                     60
Glu Pro Leu Pro Val Ile Ile Val Gly Asn Gly Pro Ser Gly Ile Cys
65                      70                     75                     80
Leu Ser Tyr Leu Leu Ser Gly Tyr Thr Pro Tyr Thr Lys Pro Asp Ala
                85                     90                     95
Ile His Pro His Pro Leu Leu Gln Arg Lys Leu Thr Glu Ala Pro Gly
            100                    105                    110
Val Ser Ile Leu Asp Gln Asp Leu Asp Tyr Leu Ser Glu Gly Leu Glu
            115                    120                    125
Gly Arg Ser Gln Ser Pro Val Ala Leu Leu Phe Asp Ala Leu Leu Arg
        130                    135                    140
Pro Asp Thr Asp Phe Gly Gly Asn Met Lys Ser Val Leu Thr Trp Lys
145                    150                    155                    160
His Arg Lys Glu His Ala Ile Pro His Val Val Leu Gly Arg
                165                    170                    174


        <210> 1453
        <211> 518
        <212>Amino acid
        <213> Homo sapiens




        <400> 1453
Asn Arg Arg Thr Arg Ala Gln Arg Cys Gln Arg Gly Arg Ser Cys Gly
1               5                      10                     15
Ala Arg Glu Glu Glu Val Glu Pro Gly Thr Ala Arg Pro Pro Pro Ala
            20                     25                     30
Ala Ser Ala Met Asp Ala Ser Leu Glu Lys Ile Ala Asp Pro Thr Leu
        35                     40                     45
Ala Glu Met Gly Lys Asn Leu Lys Glu Ala Val Lys Met Leu Glu Asp
    50                     55                     60
Ser Gln Arg Arg Thr Glu Glu Glu Asn Gly Lys Lys Leu Ile Ser Gly
65                      70                     75                     80
Asp Ile Pro Gly Pro Leu Gln Gly Ser Gly Gln Asp Met Val Ser Ile
                85                     90                     95
Leu Gln Leu Val Gln Asn Leu Met His Gly Asp Glu Asp Glu Glu Pro
            100                    105                    110
Gln Ser Pro Arg Ile Gln Asn Ile Gly Glu Gln Gly His Met Ala Leu
        115                    120                    125
Leu Gly His Ser Leu Gly Ala Tyr Ile Ser Thr Leu Asp Lys Glu Lys
    130                    135                    140
Leu Arg Lys Leu Thr Thr Arg Ile Leu Ser Asp Thr Thr Leu Trp Leu
145                    150                    155                    160
Cys Arg Ile Phe Arg Tyr Glu Asn Gly Cys Ala Tyr Phe His Glu Glu
                165                    170                    175
Glu Arg Glu Gly Leu Ala Lys Ile Cys Arg Leu Ala Ile His Ser Arg
            180                    185                    190
Tyr Glu Asp Phe Val Val Asp Gly Phe Asn Val Leu Tyr Asn Lys Lys
        195                    200                    205
Pro Val Ile Tyr Leu Ser Ala Ala Ala Arg Pro Gly Leu Gly Gln Tyr
    210                    215                    220
Leu Cys Asn Gln Leu Gly Leu Pro Phe Pro Cys Leu Cys Arg Val Pro
225                    230                    235                    240
Cys Asn Thr Val Phe Gly Ser Gln His Gln Met Asp Val Ala Phe Leu
                245                    250                    255
Glu Lys Leu Ile Lys Asp Asp Ile Glu Arg Gly Arg Leu Pro Leu Leu
            260                    265                    270
Leu Val Ala Asn Ala Gly Thr Ala Ala Val Gly His Thr Asp Lys Ile
```

```
              275                    280                    285
Gly Arg Leu Lys Glu Leu Cys Glu Gln Tyr Gly Ile Trp Leu His Val
      290                      295                    300
Glu Gly Val Asn Leu Ala Thr Leu Ala Leu Gly Tyr Val Ser Ser Ser
305                      310                    315                    320
Val Leu Ala Ala Ala Lys Cys Asp Ser Met Thr Met Thr Pro Gly Pro
                  325                    330                    335
Trp Leu Gly Leu Pro Ala Val Pro Ala Val Thr Leu Tyr Lys His Asp
          340                    345                    350
Asp Pro Ala Leu Thr Leu Val Ala Gly Leu Thr Ser Asn Lys Pro Thr
      355                    360                      365
Asp Lys Leu Arg Ala Leu Pro Leu Trp Leu Ser Leu Gln Tyr Leu Gly
      370                    375                    380
Leu Asp Gly Phe Val Glu Arg Ile Lys His Ala Cys Gln Leu Ser Gln
385                      390                    395                    400
Arg Leu Gln Glu Ser Leu Lys Lys Val Asn Tyr Ile Lys Ile Leu Val
              405                    410                    415
Glu Asp Glu Leu Ser Ser Pro Val Val Val Phe Arg Phe Phe Gln Glu
          420                    425                    430
Leu Pro Gly Ser Asp Pro Val Phe Lys Ala Val Pro Val Pro Asn Met
          435                    440                    445
Thr Pro Ser Gly Val Gly Arg Glu Arg His Ser Cys Asp Ala Leu Asn
450                    455                    460
Arg Trp Leu Gly Glu Gln Leu Lys Gln Leu Val Pro Ala Ser Gly Leu
465              470                    475                    480
Thr Val Met Asp Leu Glu Ala Glu Gly Thr Cys Leu Arg Phe Ser Pro
              485                    490                    495
Leu Met Thr Ala Ala Gly Lys Pro Gly Leu Val Asp Ile Pro Cys Phe
          500                    505                    510
Cys Ser Gly Ala Ala Gly
      515              518


         <210> 1454
         <211> 185
         <212>Amino acid
         <213> Homo sapiens




         <400> 1454
Leu Cys Ile Met Asp Thr Lys Glu Glu Lys Lys Glu Arg Lys Gln Ser
1                 5                  10                     15
Tyr Phe Ala Arg Leu Lys Lys Lys Gln Ala Lys Gln Asn Ala Glu
          20                    25                    30
Thr Ala Ser Ala Val Ala Thr Arg Thr His Thr Gly Lys Glu Asp Asn
          35                    40                    45
Asn Thr Val Val Leu Glu Pro Asp Lys Cys Asn Ile Ala Val Glu Glu
      50                    55                    60
Glu Tyr Met Thr Asp Glu Lys Lys Lys Arg Lys Ser Asn Gln Leu Lys
65                    70                    75                    80
Glu Ile Arg Arg Thr Glu Leu Lys Arg Tyr Tyr Ser Ile Asp Asp Asn
              85                    90                    95
Gln Asn Lys Thr His Asp Lys Lys Glu Lys Lys Met Val Val Gln Lys
          100                    105                    110
Pro His Gly Thr Met Glu Tyr Thr Ala Gly Asn Gln Asp Thr Leu Asn
      115                    120                    125
Ser Ile Ala Leu Lys Phe Asn Ile Thr Pro Asn Lys Leu Val Glu Leu
      130                    135                    140
Asn Lys Leu Phe Thr His Thr Ile Val Pro Gly Gln Val Leu Phe Val
145                    150                    155                    160
Pro Asp Ala Asn Ser Pro Ser Ser Thr Leu Arg Leu Ser Ser Ser Ser
```

```
                         165                      170                      175
Pro Gly Ala Thr Val Ser Pro Ser Ser
                180                      185


        <210> 1455
        <211> 206
        <212>Amino acid
        <213> Homo sapiens




        <400> 1455
Ser Ala Gly Gly Asp Ser Cys Arg Ala Val Pro Met Leu Arg Phe Pro
  1               5                  10                      15
Thr Cys Phe Pro Ser Phe Arg Val Val Gly Glu Lys Gln Leu Pro Gln
            20                  25                  30
Glu Ile Ile Phe Leu Val Trp Ser Pro Lys Arg Asp Leu Ile Ala Leu
        35                  40                  45
Ala Asn Thr Ala Gly Glu Val Leu Leu His Arg Leu Ala Ser Phe His
    50                  55                  60
Arg Val Trp Ser Phe Pro Pro Asn Glu Asn Thr Gly Lys Glu Val Thr
 65                  70                  75                      80
Cys Leu Ala Trp Arg Pro Asp Gly Lys Leu Leu Ala Phe Ala Leu Ala
                85                  90                  95
Asp Thr Lys Lys Ile Val Leu Cys Asp Val Glu Lys Pro Glu Ser Leu
            100                 105                 110
His Ser Phe Ser Val Glu Ala Pro Val Ser Cys Met His Trp Met Glu
            115                 120                 125
Val Thr Val Glu Ser Ser Val Leu Thr Ser Phe Tyr Asn Ala Glu Asp
    130                 135                 140
Glu Ser Asn Leu Leu Leu Pro Lys Leu Pro Thr Leu Pro Lys Asn Tyr
145                 150                 155                 160
Ser Asn Thr Ser Lys Ile Phe Ser Glu Glu Asn Ser Asp Glu Ile Ile
                165                 170                 175
Lys Leu Leu Gly Asp Val Arg Leu Asn Ile Leu Val Leu Gly Gly Ser
                180                 185                 190
Ser Gly Phe Ile Glu Leu Tyr Ala Tyr Gly Met Phe Lys Ile
            195                 200                 205 206


        <210> 1456
        <211> 100
        <212>Amino acid
        <213> Homo sapiens




        <400> 1456
Pro Arg Asp Pro Val Thr Asp Arg Ala Arg Ala Met Pro Arg Arg Gly
  1               5                  10                      15
Leu Val Ala Gly Pro Asp Leu Glu Tyr Phe Gln Arg His Tyr Phe Thr
            20                  25                  30
Pro Ala Glu Val Ala Gln His Asn Arg Pro Glu Asp Leu Trp Val Ser
        35                  40                  45
Tyr Leu Gly Arg Val Tyr Asp Leu Thr Ser Leu Ala Gln Glu Tyr Lys
    50                  55                  60
Gly Asn Leu Leu Leu Lys Pro Ile Val Glu Val Ala Gly Gln Asp Ile
 65                  70                  75                      80
Ser His Trp Phe Asp Pro Lys Thr Arg Asp Val Ser Tyr Ala Gly Thr
```

                        85   90   95
Trp Asp Cys Gly
              100

        <210> 1457
        <211> 159
        <212>Amino acid
        <213> Homo sapiens

        <400> 1457
Arg Ile Pro Gly Arg Arg Phe Arg Ala Ala Phe Val Leu Gly Ser Ala
1   5   10   15
Asn Val Ala Ser Ser Val Arg Leu Arg Cys Ser Phe Pro Leu Ser Leu
            20   25   30
Gly Gly Pro Ser Gly Pro Ala Ala Ala Ser Val Ala Leu Gly Pro Ala
            35   40   45
Gly Pro Gly Arg Ser Leu Gly Arg Thr Pro Asp Thr Gly Asp Trp Glu
        50   55   60
Met Asp Ser Val Ser Phe Glu Asp Val Ala Val Ala Phe Thr Gln Glu
65   70   75   80
Glu Trp Ala Leu Leu Asp Pro Ser Gln Lys Asn Leu Tyr Arg Asp Val
                85   90   95
Met Gln Glu Ile Phe Arg Asn Leu Ala Ser Val Gly Asn Lys Ser Glu
            100   105   110
Asp Gln Asn Ile Gln Asp Asp Phe Lys Asn Pro Gly Arg Asn Leu Ser
            115   120   125
Ser His Val Val Glu Arg Leu Phe Glu Ile Lys Glu Gly Ser Gln Tyr
        130   135   140
Gly Glu Thr Phe Ser Gln Asp Ser Asn Leu Asn Leu Asn Lys Ile
145   150   155   159

        <210> 1458
        <211> 154
        <212>Amino acid
        <213> Homo sapiens

/

        <400> 1458
Ser Leu Ser Leu Ser Val Ser Pro Phe Leu Arg Leu Ser Leu Gly Arg
1   5   10   15
Val Gly Gly Met Ala Glu Glu Met Glu Ser Ser Leu Glu Ala Ser Phe
            20   25   30
Ser Ser Ser Gly Ala Val Ser Gly Ala Ser Gly Phe Leu Pro Pro Ala
            35   40   45
Arg Ser Arg Ile Phe Lys Ile Ile Val Ile Gly Asp Ser Asn Val Gly
        50   55   60
Lys Thr Cys Leu Thr Tyr Arg Phe Cys Ala Gly Arg Phe Pro Asp Arg
65   70   75   80
Thr Glu Ala Thr Ile Gly Val Asp Phe Arg Glu Arg Ala Val Glu Ile
                85   90   95
Asp Gly Glu Arg Ile Lys Ile Gln Leu Trp Asp Thr Ala Gly Gln Glu
            100   105   110
Arg Phe Arg Lys Ser Met Val Gln His Tyr Tyr Arg Asn Val His Ala
            115   120   125
Val Val Phe Val Tyr Asp Met Thr Asn Met Ala Ser Phe His Ser Leu

                                906

```
      130                    135                   140
Pro Ser Trp Ile Glu Glu Cys Lys Gln His
145                    150                   154
```

```
    <210> 1459
    <211> 136
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1459
Arg Arg Pro Ser Pro Gly Ser Ile Val Ile Met Ala Ala Glu Ser Asp
 1               5                   10                  15
Val Leu His Phe Gln Phe Glu Gln Gln Gly Asp Val Val Leu Gln Lys
            20                  25                  30
Met Asn Leu Leu Arg Gln Gln Asn Leu Phe Cys Asp Val Ser Ile Tyr
            35                  40                  45
Ile Asn Asp Thr Glu Phe Gln Gly His Lys Val Ile Leu Ala Ala Cys
        50                  55                  60
Ser Thr Phe Met Arg Asp Gln Phe Leu Leu Thr Gln Ser Lys His Val
65                  70                  75                  80
Arg Ile Thr Ile Leu Gln Ser Ala Glu Val Gly Arg Lys Leu Leu Leu
                85                  90                  95
Ser Cys Tyr Thr Gly Ala Leu Glu Val Lys Arg Lys Glu Leu Leu Lys
            100                 105                 110
Tyr Leu Thr Ala Ala Ser Tyr Leu Gln Met Val His Ile Ala Glu Lys
            115                 120                 125
Arg Thr Glu Ala Phe Val Lys Phe
            130             135 136
```

```
    <210> 1460
    <211> 219
    <212>Amino acid
    <213> Homo sapiens
```

```
    <400> 1460
Ala Glu Gly Leu Gln Ser Ala Ala Gly Ile Arg Ile Asp Thr Lys Ala
 1               5                   10                  15
Gly Pro Pro Glu Met Leu Lys Pro Leu Trp Lys Ala Ala Val Ala Pro
            20                  25                  30
Thr Trp Pro Cys Ser Met Pro Pro Arg Arg Pro Trp Asp Arg Gln Ala
            35                  40                  45
Gly Thr Leu Gln Val Leu Gly Ala Leu Ala Val Leu Trp Leu Gly Ser
        50                  55                  60
Val Ala Leu Ile Cys Leu Leu Trp Gln Val Pro Arg Pro Pro Thr Trp
65                  70                  75                  80
Gly Gln Val Gln Pro Lys Asp Val Pro Arg Ser Trp Glu His Gly Ser
                85                  90                  95
Ser Pro Ala Trp Glu Pro Leu Glu Ala Glu Ala Arg Gln Gln Arg Asp
            100                 105                 110
Ser Cys Gln Leu Val Leu Val Glu Ser Ile Pro Gln Asp Leu Pro Ser
            115                 120                 125
Ala Ala Gly Ser Pro Ser Ala Gln Pro Leu Gly Gln Ala Trp Leu Gln
            130                 135                 140
Leu Leu Asp Thr Ala Gln Glu Ser Val His Val Ala Ser Tyr Tyr Trp
```

907

```
145                    150                    155                    160
Ser Leu Thr Gly Pro Asp Ile Gly Val Asn Asp Ser Ser Ser Gln Leu
                   165                    170                    175
Gly Glu Ala Leu Leu Gln Lys Leu Gln Gln Leu Leu Gly Arg Asn Ile
               180                    185                    190
Ser Leu Ala Val Ala Thr Ser Ser Pro Thr Leu Ala Arg Thr Ser Thr
           195                    200                    205
Asp Leu Gln Val Leu Ala Ala Arg Gly Ala His
       210                    215        219
```

```
<210> 1461
<211> 80
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1461
Arg Lys Lys Lys Met Pro Leu Pro Phe Gly Leu Lys Leu Lys Arg Thr
1                   5                   10                  15
Arg Arg Tyr Thr Val Ser Ser Lys Ser Cys Leu Val Ala Arg Ile Gln
            20                  25                  30
Leu Leu Asn Asn Glu Phe Val Glu Phe Thr Leu Ser Val Glu Ser Thr
        35                  40                  45
Gly Gln Glu Ser Leu Glu Ala Val Ala Gln Arg Leu Glu Leu Arg Glu
    50                  55                  60
Val Thr Tyr Phe Ser Leu Trp Tyr Tyr Asn Lys Gln Asn Gln Arg Arg
65                  70                  75                  80
```

```
<210> 1462
<211> 176
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1462
Leu Gln Pro Leu Ser Ser Trp Glu Ser Ala Ser Glu Val Thr Arg Ser
1                   5                   10                  15
Pro Val Ser Pro Glu Asp Val Lys Gln Ala Thr Ser Asn Phe Glu Asn
            20                  25                  30
Leu Gln Lys Gln Leu Ala Arg Lys Met Lys Leu Pro Ile Phe Ile Ala
        35                  40                  45
Asp Ala Phe Thr Ala Arg Ala Phe Arg Gly Asn Pro Ala Ala Val Cys
    50                  55                  60
Leu Leu Glu Asn Glu Leu Asp Glu Asp Met His Gln Lys Ile Ala Arg
65                  70                  75                  80
Glu Met Asn Leu Ser Glu Thr Ala Phe Ile Arg Lys Leu His Pro Thr
                85                  90                  95
Asp Asn Phe Ala Gln Ser Ser Cys Phe Gly Leu Arg Trp Phe Thr Pro
            100                 105                 110
Ala Ser Glu Val Pro Leu Cys Gly His Ala Thr Leu Ala Ser Ala Ala
        115                 120                 125
Val Leu Phe His Lys Ile Lys Asn Met Asn Ser Thr Leu Thr Phe Val
    130                 135                 140
Thr Leu Ser Gly Glu Leu Arg Ala Arg Arg Ala Glu Asp Gly Ile Val
```

```
145                    150                    155                    160
Leu Asp Leu Pro Leu Tyr Pro Ala His Pro Gln Asp Phe His Glu  *
                       165                    170                    175


        <210> 1463
        <211> 150
        <212>Amino acid
        <213> Homo sapiens




        <400> 1463
Ala Ala Asp Thr Met Gln Ser Asp Asp Val Ile Trp Asp Thr Leu Gly
 1               5                   10                  15
Asn Lys Gln Phe Cys Ser Phe Lys Ile Arg Thr Lys Thr Gln Ser Phe
            20                  25                  30
Cys Arg Asn Glu Tyr Ser Leu Thr Gly Leu Cys Asn Arg Ser Ser Cys
        35                  40                  45
Pro Leu Ala Asn Ser Gln Tyr Ala Thr Ile Lys Glu Glu Lys Gly Gln
    50                  55                  60
Cys Tyr Leu Tyr Met Lys Val Ile Glu Arg Ala Ala Phe Pro Arg Arg
65                  70                  75                  80
Leu Trp Glu Arg Val Arg Leu Ser Lys Asn Tyr Glu Lys Ala Leu Glu
                85                  90                  95
Gln Ile Asp Glu Asn Leu Ile Tyr Trp Pro Arg Phe Ile Arg His Lys
            100                 105                 110
Cys Lys Gln Arg Phe Thr Lys Ile Thr Gln Tyr Leu Ile Arg Ile Arg
        115                 120                 125
Lys Leu Thr Leu Lys Arg Gln Arg Lys Leu Val Pro Leu Ser Lys Lys
    130                 135                 140
Val Glu Arg Arg Glu Lys
145                 150


        <210> 1464
        <211> 86
        <212>Amino acid
        <213> Homo sapiens




        <400> 1464
Phe Val Glu Arg Gly Leu Gly Asp Pro Ala Leu Pro Thr Leu Met Phe
 1               5                   10                  15
Glu Glu Pro Glu Trp Ala Glu Ala Ala Pro Val Ala Ala Gly Leu Gly
            20                  25                  30
Pro Val Ile Ser Arg Pro Pro Ala Ala Ser Ser Gln Asn Lys Val
        35                  40                  45
Ser Asp Ser Arg Glu Gln Trp Glu Leu Phe Gln Ala Ala Lys Arg Thr
    50                  55                  60
Leu Val Asp Pro Ser Ala Val Cys Ile Ala Gly Arg Asp Thr Cys Gly
65                  70                  75                  80
Thr Val Lys Gly Glu Ser
                85  86


        <210> 1465
        <211> 286
        <212>Amino acid
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<213> Homo sapiens

<400> 1465

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Val Val Glu Phe Leu Trp Ser Arg Arg Pro Ser Gly Ser Ser Asp Pro
1               5                   10                  15
Arg Pro Arg Arg Pro Ala Ser Lys Cys Gln Met Met Glu Glu Arg Ala
            20                  25                  30
Asn Leu Met His Met Met Lys Leu Ser Ile Lys Val Leu Leu Gln Ser
            35                  40                  45
Ala Leu Ser Leu Gly Arg Ser Leu Asp Ala Asp His Ala Pro Leu Gln
    50                  55                  60
Gln Phe Phe Val Val Met Glu His Cys Leu Lys His Gly Leu Lys Val
65                  70                  75                  80
Lys Lys Ser Phe Ile Gly Gln Asn Lys Ser Phe Phe Gly Pro Leu Glu
                85                  90                  95
Leu Val Glu Lys Leu Cys Pro Glu Ala Ser Asp Ile Ala Thr Ser Val
            100                 105                 110
Arg Asn Leu Pro Glu Leu Lys Thr Ala Val Gly Arg Gly Arg Ala Trp
            115                 120                 125
Leu Tyr Leu Ala Leu Met Gln Lys Lys Leu Ala Asp Tyr Leu Lys Val
    130                 135                 140
Leu Ile Asp Asn Lys His Leu Leu Ser Glu Phe Tyr Glu Pro Glu Ala
145                 150                 155                 160
Leu Met Met Glu Glu Glu Gly Met Val Ile Val Gly Leu Leu Val Gly
                165                 170                 175
Leu Asn Val Leu Asp Ala Asn Leu Cys Leu Lys Gly Glu Asp Leu Asp
            180                 185                 190
Ser Gln Val Gly Val Ile Asp Phe Ser Leu Tyr Leu Lys Asp Val Gln
            195                 200                 205
Asp Leu Asp Gly Gly Lys Glu His Glu Arg Ile Thr Asp Val Leu Asp
    210                 215                 220
Gln Lys Asn Tyr Val Glu Glu Leu Asn Arg His Leu Ser Cys Thr Val
225                 230                 235                 240
Gly Asp Leu Gln Thr Lys Ile Asp Gly Leu Glu Lys Thr Asn Ser Lys
                245                 250                 255
Leu Gln Glu Arg Val Ser Ala Ala Thr Asp Arg Ile Cys Ser Leu Gln
            260                 265                 270
Glu Glu Gln Gln Gln Leu Arg Glu Gln Asn Glu Leu Ile Arg
    275                 280                 285 286
```


<210> 1466
<211> 127
<212>Amino acid
<213> Homo sapiens

<400> 1466

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Gly Cys Tyr Ala Pro Ser Pro His Leu Gly Gly Ser Leu Thr Pro Arg
1               5                   10                  15
Phe Phe Pro Asn Gly Val Phe His Arg Arg Leu Pro Arg Pro Arg Pro
            20                  25                  30
Pro Gln Pro Pro Ser Val Ser Ser Ala Pro Thr Leu Arg Pro Leu Cys
            35                  40                  45
Ala His Phe Ser Leu Gly Lys Leu Arg Leu Arg Val Arg Lys Ser Ala
    50                  55                  60
Glu Val Ala Pro Pro Arg Thr Glu Lys Gly Trp Gly Ser Ala Glu Pro
```

```
65                          70                    75                      80
Arg His Ser Arg Ala Pro Leu Gly Leu Gln Gly Leu Arg Met Ala Ala
                    85                    90                    95
Ser Ala Gln Val Ser Val Thr Phe Glu Asp Val Ala Val Thr Phe Thr
                100                   105                   110
Gln Glu Glu Trp Gly Gln Leu Asp Ala Ala Gln Arg Thr Leu Tyr
            115                   120                   125   127
```

```
<210> 1467
<211> 146
<212> Amino acid
<213> Homo sapiens
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```
<400> 1467
Phe Arg Gly Ser Leu Ser Ser Pro Ser Ser Leu Arg Gly Arg Arg Leu
1               5               10                  15
Val Thr Gly Gln Thr Ser Pro Arg Gly Thr Trp Cys Leu Tyr Pro Gly
                20                  25                  30
Phe Cys Arg Ser Val Ala Cys Ala Met Pro Cys Cys Ser His Arg Ser
            35                  40                  45
Cys Arg Glu Asp Pro Gly Thr Ser Glu Ser Arg Glu Met Asp Pro Val
        50                  55                  60
Val Phe Glu Asp Val Ala Val Asn Phe Thr Gln Glu Glu Trp Thr Leu
65                  70                  75                  80
Leu Asp Ile Ser Gln Lys Asn Leu Phe Arg Glu Val Met Leu Glu Thr
                85                  90                  95
Phe Arg Asn Leu Thr Ser Ile Gly Lys Lys Trp Ser Asp Gln Asn Ile
                100                 105                 110
Glu Tyr Glu Tyr Gln Asn Pro Arg Arg Ser Phe Arg Ser Leu Ile Glu
            115                 120                 125
Glu Lys Val Asn Glu Ile Lys Glu Asp Ser His Cys Gly Glu Thr Phe
        130                 135                 140
Thr Gln
145 146
```

```
<210> 1468
<211> 44
<212> Amino acid
<213> Homo sapiens
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```
<400> 1468
Leu Asn Phe Ala Asn Ser Ala Ala Phe Ala Val Thr Met Pro Gln Asn
1               5               10                  15
Glu Tyr Ile Glu Leu His Arg Lys Arg Tyr Gly Phe Arg Leu Asp Tyr
                20                  25                  30
His Glu Lys Lys Arg Lys Lys Gln Ser Arg Glu Ala
            35                  40          44
```

```
<210> 1469
<211> 198
<212> Amino acid
<213> Homo sapiens
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<400> 1469

Ser Gly Asp Leu Ser Pro Ala Glu Leu Met Met Leu Thr Ile Gly Asp
1   5   10   15
Val Ile Lys Gln Leu Ile Glu Ala His Glu Gln Gly Lys Asp Ile Asp
            20   25   30
Leu Asn Lys Val Lys Thr Lys Thr Ala Ala Lys Tyr Gly Leu Ser Ala
        35   40   45
Gln Pro Arg Leu Val Asp Ile Ile Ala Ala Val Pro Pro Gln Tyr Arg
    50   55   60
Lys Val Leu Met Pro Lys Leu Lys Ala Lys Pro Ile Arg Thr Ala Ser
65   70   75   80
Gly Ile Ala Val Val Ala Val Met Cys Lys Pro His Arg Cys Pro His
                85   90   95
Ile Ser Phe Thr Gly Asn Ile Cys Val Tyr Cys Pro Gly Gly Pro Asp
            100   105   110
Ser Asp Phe Glu Tyr Ser Thr Gln Ser Tyr Thr Gly Tyr Glu Pro Thr
        115   120   125
Ser Met Arg Ala Ile Arg Ala Arg Tyr Asp Pro Phe Leu Gln Thr Arg
    130   135   140
His Arg Ile Glu Gln Leu Lys Gln Leu Gly His Ser Val Asp Lys Val
145   150   155   160
Glu Phe Ile Glu Met Gly Gly Thr Phe Met Ala Leu Pro Glu Glu Tyr
                165   170   175
Arg Asp Tyr Phe Ile Arg Asn Leu His Asp Ala Leu Ser Gly His Thr
            180   185   190
Ser Asn Asn Ile Tyr Glu
        195   198

<210> 1470
<211> 178
<212> Amino acid
<213> Homo sapiens

<400> 1470

Trp Glu Ser Asp Val Gly Glu Gly Leu Arg Pro Pro Pro Pro Pro Pro
1   5   10   15
Pro Pro Gly Arg Arg Arg Thr Gln Glu Pro Arg Ala Arg Asp Ala Ala
            20   25   30
Thr Val Ile Phe Ala Cys Pro Ala Ala Leu Leu Glu Thr Leu Ile Ala
        35   40   45
Tyr Gly Ser Ser Ser Pro Ser Phe Cys Lys His Arg Ala Ala Arg Pro
    50   55   60
Leu Ile Phe Leu Leu His Arg Leu Thr Ala Glu Ala Thr Ala Arg Cys
65   70   75   80
Pro Ile Cys Ala Leu Glu Ala Arg Asn Pro Gly Arg Trp Gly Ile Cys
                85   90   95
Ala Ser Trp Pro Gly Met Lys Thr Pro Phe Gly Lys Ala Ala Ala Gly
            100   105   110
Gln Arg Ser Arg Thr Gly Ala Gly His Gly Ser Val Ser Val Thr Met
        115   120   125
Ile Lys Arg Lys Ala Ala His Lys Lys His Arg Ser Arg Pro Thr Ser
    130   135   140
Gln Pro Arg Gly Asn Ile Val Gly Cys Ile Ile Gln His Gly Trp Lys
145   150   155   160
Asp Gly Asp Glu Pro Leu Thr Gln Trp Lys Gly Thr Val Leu Asp Gln

                    165   170   175
Leu Leu
    178

        <210> 1471
        <211> 253
        <212>Amino acid
        <213> Homo sapiens

        <400> 1471
Arg Asp Leu Gly Val Ala Leu Glu Ala Phe Gln Trp Ala Arg Ala Gly
1   5   10   15
Asp Cys Gly Ser Gly Ala Gly Arg Ala Gly Gly Glu Gly Val Asp Ala
            20   25   30
Gly Arg Arg Val Pro Glu Arg Gln His Arg Gly Arg Gly Gly Gly Gly
        35   40   45
Glu Pro Gly Arg Arg Gln Arg Gly Gly Arg Arg Gln Arg Ser Ser Ser
    50   55   60
Arg Arg Ser Gly Gly Asp Gly Gly Asp Glu Val Glu Gly Ser Gly Val
65   70   75   80
Gly Ala Gly Glu Gly Glu Thr Val Gln His Phe Pro Leu Ala Arg Pro
                85   90   95
Lys Ser Leu Met Gln Lys Leu Gln Cys Ser Phe Gln Thr Ser Trp Leu
            100   105   110
Lys Asp Phe Pro Trp Leu Arg Tyr Ser Lys Asp Thr Gly Leu Met Ser
            115   120   125
Cys Gly Trp Cys Gln Lys Thr Pro Ala Asp Gly Gly Ser Val Asp Leu
            130   135   140
Pro Pro Val Gly His Asp Glu Leu Ser Arg Gly Thr Arg Asn Tyr Lys
145   150   155   160
Lys Thr Leu Leu Leu Arg His His Val Ser Thr Glu His Lys Leu His
            165   170   175
Glu Ala Asn Ala Gln Glu Ser Glu Ile Pro Ser Glu Glu Gly Tyr Cys
            180   185   190
Asp Phe Asn Ser Arg Pro Asn Glu Asn Ser Tyr Cys Tyr Gln Leu Leu
            195   200   205
Arg Gln Leu Asn Glu Gln Arg Lys Lys Gly Ile Leu Cys Asp Val Ser
    210   215   220
Ile Val Val Ser Gly Lys Ile Phe Lys Ala His Lys Asn Ile Leu Val
225   230   235   240
Ala Gly Ser Arg Phe Phe Lys Thr Leu Tyr Cys Phe Ser
            245   250   253

        <210> 1472
        <211> 147
        <212>Amino acid
        <213> Homo sapiens

        <400> 1472
Ser Leu Arg Ala Ala Ala Ala Met Ala Asp Val Thr Ala Arg Ser Leu
1   5   10   15
Gln Tyr Glu Tyr Lys Ala Asn Ser Asn Leu Val Leu Gln Ala Asp Arg
            20   25   30
Ser Leu Ile Asp Arg Thr Arg Arg Asp Glu Pro Thr Gly Glu Val Leu

                            913

```
            35                      40                  45
Ser Leu Val Gly Lys Leu Glu Gly Thr Arg Met Gly Asp Lys Ala Gln
        50                  55                  60
Arg Thr Lys Pro Gln Met Gln Glu Glu Arg Arg Ala Lys Arg Arg Lys
65                      70                  75                  80
Arg Asp Glu Asp Arg His Asp Ile Asn Lys Met Lys Gly Tyr Thr Leu
                85                  90                  95
Leu Ser Glu Gly Ile Asp Glu Met Val Gly Ile Ile Tyr Lys Pro Lys
            100                 105                 110
Thr Lys Glu Thr Arg Glu Thr Tyr Glu Val Leu Leu Ser Phe Ile Gln
            115                 120                 125
Ala Ala Leu Gly Asp Gln Pro Arg Asp Ile Leu Cys Gly Ala Ala Asp
        130                 135                 140
Glu Val Leu
145     147
```

```
        <210> 1473
        <211> 139
        <212>Amino acid
        <213> Homo sapiens
```

```
        <400> 1473
Cys Asn Ser Ala Glu Ser Arg Met Asp Val Leu Phe Val Ala Ile Phe
1               5                   10                  15
Ala Val Pro Leu Ile Leu Gly Gln Glu Tyr Glu Asp Glu Glu Arg Leu
            20                  25                  30
Gly Glu Asp Glu Tyr Tyr Gln Val Val Tyr Tyr Tyr Thr Val Thr Pro
            35                  40                  45
Ser Tyr Asp Asp Phe Ser Ala Asp Phe Thr Ile Asp Tyr Ser Ile Phe
    50                  55                  60
Glu Ser Glu Asp Arg Leu Asn Arg Leu Asp Lys Asp Ile Thr Glu Ala
65                  70                  75                  80
Ile Glu Thr Thr Ile Ser Leu Glu Thr Ala Arg Ala Asp His Pro Lys
                85                  90                  95
Pro Val Thr Val Lys Pro Val Thr Thr Glu Pro Gln Ser Pro Asp Leu
            100                 105                 110
Asn Asp Ala Val Ser Ser Leu Arg Ser Pro Ile Pro Leu Leu Leu Ser
        115                 120                 125
Cys Ala Phe Val Gln Val Gly Met Tyr Phe Met
        130                 135                 139
```

```
        <210> 1474
        <211> 185
        <212>Amino acid
        <213> Homo sapiens
```

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        <220>
        <221> misc_feature
        <222> (1)...(185)
        <223> X = any amino acid or stop code
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        <400> 1474
Phe Val Arg Gly Pro Gly Glu Glu Gln Ala Pro Ala Phe Arg Lys Pro
1               5                   10                  15
```

```
Ala Pro Gly Ala Met Gly Ala Gln Val Arg Leu Pro Pro Gly Glu Pro
            20              25                      30
Cys Arg Glu Gly Tyr Val Leu Ser Leu Val Cys Pro Asn Ser Ser Gln
            35              40                      45
Ala Trp Cys Glu Ile Thr Asn Val Ser Gln Leu Leu Ala Ser Pro Val
    50              55                      60
Leu Tyr Thr Asp Leu Asn Tyr Ser Ile Asn Asn Leu Ser Ile Ser Ala
65                  70                      75                  80
Asn Val Glu Asn Lys Tyr Ser Leu Tyr Val Gly Leu Val Leu Ala Val
                85                      90                      95
Ser Ser Ser Ile Phe Ile Gly Ser Ser Phe Ile Leu Lys Lys Lys Gly
            100                     105                     110
Leu Leu Gln Leu Ala Ser Lys Gly Phe Thr Arg Ala Gly Gln Gly Gly
            115                     120                     125
His Ser Tyr Leu Lys Glu Trp Leu Trp Trp Val Gly Leu Leu Ser Ile
    130                     135                     140
Leu Ser Trp Asn Ala Arg Glu Lys Val Asp Leu Xaa Asn Ile Thr Phe
145                     150                     155                 160
Xaa Pro Gln Thr Ser Cys Ile Phe Phe Thr Ile Thr Ile Glu Lys Ser
                165                     170                     175
Thr Phe Leu Ser Tyr Phe Pro Thr Ser
            180                     185
```

```
<210> 1475
<211> 91
<212>Amino acid
<213> Homo sapiens
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```
<400> 1475
Ala Arg Gly Ser Cys Pro Thr Arg Pro Arg Pro Ala Asn Gly Arg Met
1               5               10                      15
Ala Glu Thr Lys Asp Ala Ala Gln Met Leu Val Thr Phe Lys Asp Val
            20                      25                      30
Ala Val Thr Phe Thr Arg Glu Glu Trp Arg Gln Leu Asp Leu Ala Gln
            35                      40                      45
Arg Thr Leu Tyr Arg Glu Val Met Leu Glu Thr Cys Gly Leu Leu Val
    50                      55                      60
Ser Leu Gly His Arg Val Pro Lys Pro Glu Leu Val His Leu Leu Lys
65                      70                      75                  80
His Gly Gln Glu Leu Trp Ile Val Lys Arg Gly
                85                      90  91
```

```
<210> 1476
<211> 159
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1476
Tyr Thr Met Leu Arg Gly Thr Met Thr Ala Trp Arg Gly Met Arg Pro
1               5               10                      15
Glu Val Thr Leu Ala Cys Leu Leu Leu Ala Thr Ala Gly Cys Phe Ala
            20                      25                      30
Asp Leu Asn Glu Val Pro Gln Val Thr Val Gln Pro Ala Ser Thr Val
            35                      40                      45
```

```
Gln Lys Pro Gly Gly Thr Val Ile Leu Gly Cys Val Val Glu Pro Pro
    50                  55                  60
Arg Met Asn Val Thr Trp Arg Leu Asn Gly Lys Glu Leu Asn Gly Ser
65                  70                  75                  80
Asp Asp Ala Leu Gly Val Leu Ile Thr His Gly Thr Leu Val Ile Thr
            85                  90                  95
Ala Leu Asn Asn His Thr Val Gly Arg Tyr Gln Cys Val Ala Arg Met
            100                 105                 110
Pro Ala Gly Ala Val Ala Ser Val Pro Ala Thr Val Thr Leu Ala Ser
        115                 120                 125
Glu Ser Ala Pro Leu Pro Pro Cys His Gly Ala Val Pro Pro His Leu
    130                 135                 140
Ser His Pro Glu Ala Pro Thr Ile His Ala Ala Ser Cys Tyr Ser
145                 150                 155         159
```

```
<210> 1477
<211> 139
<212>Amino acid
<213> Homo sapiens
```

```
<400> 1477
Trp Gly Arg Arg Arg Gln Leu Val Ser Glu Ala Ala Arg Ala Gln Gly
1                   5                   10                  15
Asp Pro Val Cys Ser Thr Met Ser Glu Glu Glu Ala Ala Gln Ile Pro
            20                  25                  30
Arg Ser Ser Val Trp Glu Gln Asp Gln Gln Asn Val Val Gln Arg Val
        35                  40                  45
Val Ala Leu Pro Leu Val Arg Ala Thr Cys Thr Ala Val Cys Asp Val
    50                  55                  60
Tyr Ser Ala Ala Lys Asp Arg His Pro Leu Leu Gly Ser Ala Cys Arg
65                  70                  75                  80
Leu Ala Glu Asn Cys Val Cys Gly Leu Thr Thr Arg Ala Leu Asp His
            85                  90                  95
Ala Gln Pro Leu Leu Glu His Leu Gln Pro Gln Leu Ala Thr Met Asn
        100                 105                 110
Ser Leu Ala Cys Arg Gly Leu Asp Lys Leu Glu Glu Lys Leu Pro Phe
        115                 120                 125
Leu Gln Gln Pro Ser Glu Thr Val Val Thr Ser
    130                 135                 139
```

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<210> 1478
<211> 331
<212>Amino acid
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(331)
<223> X = any amino acid or stop code
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<400> 1478
Ala Lys Ala Phe Thr Met Ala Glu Ser Pro Gly Cys Cys Ser Val Trp
1                   5                   10                  15
Ala Arg Cys Leu His Cys Leu Tyr Ser Cys His Trp Arg Lys Cys Pro
```

```
                 20                        25                        30
Arg Glu Arg Met Gln Thr Ser Lys Cys Asp Cys Ile Trp Phe Gly Leu
             35                        40                        45
Leu Phe Leu Thr Phe Leu Leu Ser Leu Ser Trp Leu Tyr Ile Gly Leu
         50                        55                        60
Val Leu Leu Asn Asp Leu His Asn Phe Asn Glu Phe Leu Phe Arg Arg
 65                        70                        75                    80
Trp Gly His Trp Met Asp Trp Ser Leu Ala Phe Leu Leu Val Ile Ser
                 85                        90                        95
Leu Leu Gly Thr Tyr Ala Ser Leu Leu Leu Val Leu Ala Leu Leu Leu
                100                       105                       110
Arg Leu Cys Arg Gln Pro Leu His Leu His Ser Leu His Lys Val Leu
         115                       120                       125
Leu Leu Leu Ile Met Leu Leu Val Ala Ala Gly Leu Val Gly Leu Asp
     130                       135                       140
Ile Gln Trp Gln Gln Glu Arg His Ser Leu Arg Val Ser Leu Gln Asp
145                       150                       155                   160
Cys Arg Xaa Leu Xaa Thr Pro Ala Val Arg Pro Xaa Glu Glu Ser Gly
             165                       170                       175
Glu Gly His Trp Arg Arg Ala His Leu Thr Ser Ser Cys Pro Gln Ala
             180                       185                       190
Thr Ala Pro Phe Leu His Ile Gly Ala Ala Ala Gly Ile Ala Leu Leu
         195                       200                       205
Ala Trp Pro Val Ala Asp Thr Phe Tyr Arg Ile His Arg Arg Glu Pro
     210                       215                       220
Lys Ile Leu Leu Leu Leu Leu Phe Phe Gly Val Val Leu Val Ile Tyr
225                       230                       235                   240
Leu Ala Pro Leu Cys Ile Ser Ser Pro Cys Ile Met Glu Pro Arg Asp
             245                       250                       255
Leu Pro Pro Lys Pro Gly Leu Val Gly His Arg Gly Ala Pro Met Leu
             260                       265                       270
Ala Pro Glu Asn Thr Leu Met Ser Leu Arg Lys Thr Ala Glu Cys Gly
         275                       280                       285
Ala Thr Val Phe Glu Thr Asp Val Met Val Ser Ser Asp Gly Val Pro
     290                       295                       300
Phe Leu Met His Asp Glu His Leu Ser Arg Thr Thr Asn Val Ala Ser
305                       310                       315                   320
Val Phe Pro Thr Arg Ile Thr Ala His Ser Ser
             325                       330 331
```

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C07H 21/02

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US   09/488,725 (CIP)
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(81) Designated States (national): AE, AG, AL, AM, AT, AU,
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LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
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ning of each regular issue of the PCT Gazette.

(54) Title: NOVEL NUCLEIC ACIDS AND POLYPEPTIDES

(57) Abstract: The present invention provides novel nucleic acids, novel polypeptide sequences encoded by these nucleic acids and uses thereof.

INTERNATIONAL SEARCH REPORT

A.	CLASSIFICATION OF SUBJECT MATTER
IPC(7)	: C12Q 1/68; C07H 21/02
US CL	: 435/6; 536/23.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
  U.S. : 435/6; 536/23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	Database EST, National Human Genome Institute (Bethesda, MD, USA), Accession Number AW068570, JIA et al., 'SGAP: The Skeletal Genome Anatomy Project,' 13 October 1999.	2-3 and 10 ---------- 6-9, 11 and 19
Y	WATSON et al. The Science Used in the Recombinant DNA Industry. Recombinant DNA; A Short Course. New York. W.H. Freeman and Company. 1983, pages 231-241, Chapter 18, see entire document.	6-9, 11 and 19

☐ Further documents are listed in the continuation of Box C.   ☐ See patent family annex.

*	Special categories of cited documents:
"A"	document defining the general state of the art which is not considered to be of particular relevance
"E"	earlier application or patent published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed

"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 July 2001 (31.07.2001)	**31 AUG 2001**

Name and mailing address of the ISA/US	Authorized officer
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Young J. Kim TERRY J. DEY PARALEGAL SPECIALIST Telephone No. (703) 308-0196 TECHNOLOGY CENTER 1600

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/35017

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-11, 19, and SEQ ID Number 1 (Claim 20 was in Group I but is not drawn to the elected sequence.)

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet(1)) (July 1998)

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-11, 19, and 20, drawn to a polynucleotide, a vector comprising the polynucleotide, a host cell comprising the vector, a polypeptide, a method of producing the polypeptide, and a composition comprising the polypeptide of Group I and a carrier.

Group II, claim(s) 12, drawn to an antibody specific for the polypeptide of Group I.

Group III, claim(s) 13-15, drawn to a method of detecting the polynucleotide of Group I.

Group IV, claim(s) 16, drawn to a method of detecting the polypeptide of Group I.

Group V, claim(s) 17 and 18, drawn to a method of finding a binding partner of the polypeptide of Group I.

Group VI, claim(s) 21, drawn to a polypeptide array.

Group VII, claim(s) 22-26, drawn to an array of polynucleotides comprising the polynucleotide of Group I.

Group VIII, claim(s) 27, drawn to a method of therapeutic treatment using the polypeptide of Group I.

Group IX, claim(s) 28, drawn to a method of therapeutic treatment using an antibody.

The inventions listed as Groups I-IX do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The polynucleotide of claim Group I lack a special technical feature because each polynucleotide is directed to a unique sequence which may give rise to a polypeptide with unique function. In addition, each additional group set forth has its own unifying feature which is distinct from that of the other. Finally, PCT Rule 13.1 and Annex B do not provide for unity of invention between two or more different products or methods of use that share a special technical feature.

In addition, each Group detailed above reads on distinct Groups drawn to multiple sequences. The sequences are distinct because they are unrelated sequences, and a further lack of unity is applied to each Group. The Applicants must further elect one sequence for examination in the elected Group detailed above. Payment of fees for an additional invention will entitle the Applicants to examination of one additional sequence.

The total number of invention was calculated based on the number of combination that exist between the SEQ ID Numbers and the total number of groups. The formula is recited below:

Total Number of Inventions found = (Total Groups X Total SEQ ID Numbers) - Total Groups
Total Number for this Application = (9 X 739) - 9 = 6642

Continuation of B. FIELDS SEARCHED Item 3:
Database EST, GenEmbl, GenBank;
Search terms: SEQ ID Number 1